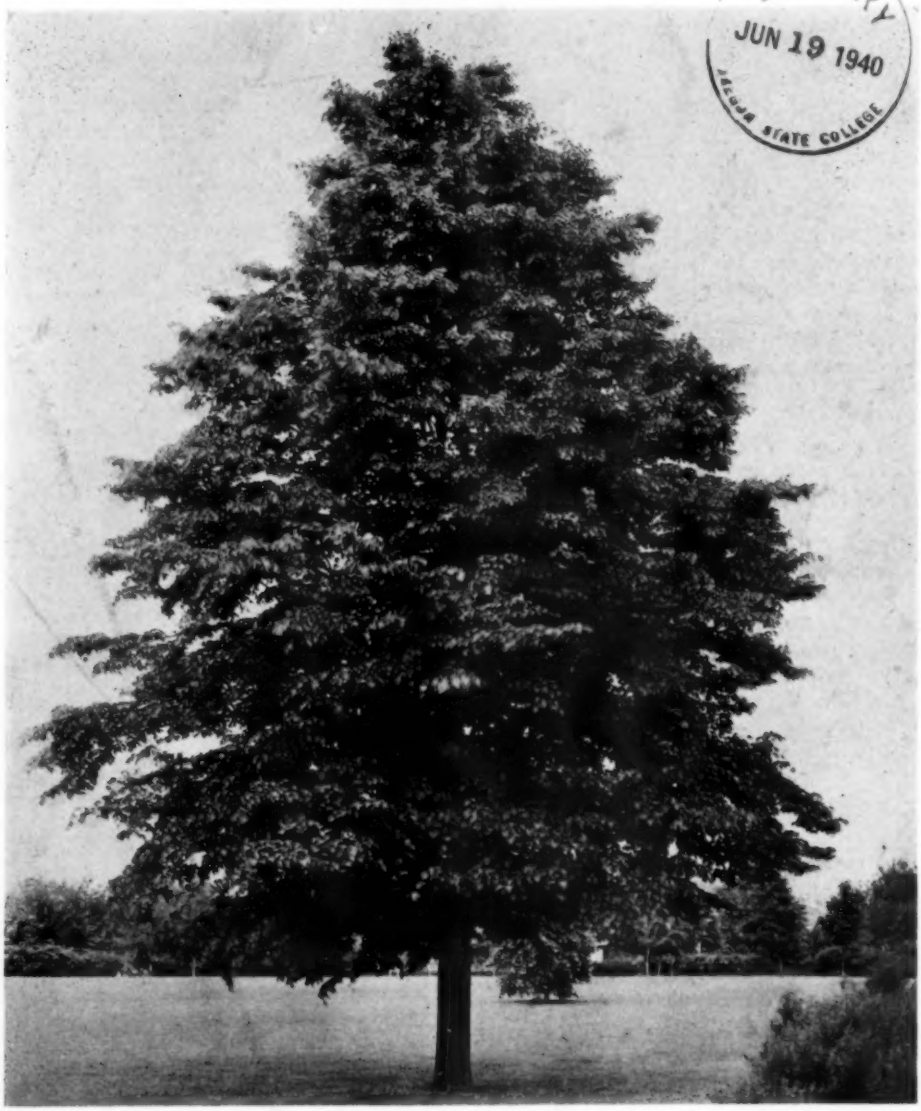
88.5

AMERICAN NURSERYMAN

and The NATIONAL NURSERYMAN

JUNE 15, 1940

LIBRARY
JUN 19 1940
OREGON STATE COLLEGE



Tilia Cordata

Safety Practices in Tree Work
Landscape Labor Costs vs. Profits
Selection of Narrow-leaved Evergreens
Excerpts from a Plantsman's Notebook

AMERICAN NURSERYMAN
and The NATIONAL NURSERYMAN
F. R. KILNER, Editor

Editorial

ORGANIZE THE OFFICE.

While he recovers from the arduous exertion of a strenuous planting season, the nursery owner or manager is probably engaged this month in getting through the accumulations on the office desk, where correspondence, memoranda, invoices, orders, etc., present a formidable pile.

Some correspondence, it is regretted, is too old to be worth answering now. Some business inquiries are possibly too late to receive attention. The tired nurseryman forgives himself, and expects everybody else to forgive him, because the busy season makes it a physical impossibility to tend to other things while the planting rush is on.

To that individual it may be news that some nurserymen, feeling that their line of endeavor might justifiably take its place beside other modern forms of business, have so organized their offices that they continue to function in a reasonable manner while the rush is on as well as at other times. In fact, they believe that there is more reason for the office routine to move promptly in the rush period, for that is when the possibilities for doing business and satisfying customers are the greatest.

Even if fellow tradesmen and some portion of the public forgive the busy nurseryman his shortcomings with regard to correspondence in April and May, obviously they have the greater admiration for the nurseryman who has his office equipped and organized to function at customers' convenience, instead of his.

Now, while that pile on the desk is being attacked, wouldn't it be a good time to study just how your office might be put in shape to run next season in a way you would like to have it run? Surely some temporary help is available, even if you can only afford a high-school girl or two after school hours. Of course, it is a problem, but not unique among nurserymen. Every line of business has its peaks and valleys, its rush and dull periods, and it is the function of the management to organize office, store or factory accordingly.

The Mirror of the Trade

The satisfaction of dealing with a prompt businessman carries a tremendous amount of customer good will. If one nurseryman does not develop it, another will do so. The days of annual or semiannual settlements are memories in most lines of business. So many transactions today are for cash or weekly settlement that a monthly basis for bookkeeping is as long a period as should be recognized. Speed up your office routine to take care of the next season's rush. It can be done with care and thought now.

SALES FRANKNESS.

More than one "prominent businessman" has undertaken to operate a nursery on the side, but few are so frank about its object as the one quoted in the following account from Tide, the news magazine of advertising and marketing:

A prominent businessman we know operates a tree nursery on the side. It's a kind of hobby with him, but it also gives him something to lavish his money on so he won't have to pay it all in income taxes. Every once in a while he's got to offer some of his trees for sale—no matter how anxious he may be to take a big loss on this thing. So he works up a sales circular and sends it around sparingly, telling what he has in stock. It usually makes very interesting reading, because the gentleman is trying not to get people too steamed up about buying anything. Which is why the following paragraph, from one of his recent circulars, is something unique in sales literature.

"From the earliest days of its settlement," he says, "this country has been outstanding for its nursery industry. I respectfully urge readers to visit some of the . . . county nurseries . . . and see the stock while still in the ground. You are also invited to ours, but you won't see much. We have a little of the same material that the other nurseries offer, and it is no better than theirs and will cost you more."

BUYING HELPS SELLING.

Whenever there is a contraction of business activity, the head of the firm is likely to tell the salesmen to increase their activity while he tells the purchasing agent to curtail orders.

Does he stop to think of the result if others, including customers, do likewise? Buying will be less, and selling will be harder.

Wouldn't it be better for all concerned to hold off spending quite so freely when everything looks prosperous and then, when a dull period approaches, be in position to place an extra order or two? It doesn't sound like human nature, but it would be excellent business.

ANOTHER CODE OF ETHICS.

Supplementing the codes of ethics adopted by several state associations of nurserymen, published in the May 15 issue of this magazine, one of the early officers of the Northern Retail Nurserymen's Association, which meets annually at St. Paul, Minn., has found in old files the following code of ethics adopted by that organization December 19, 1926:

1. To consider my vocation worthy, as affording me distinct opportunity to serve society.

2. To improve myself, increase my efficiency and enlarge my service, and by so doing attest my faith in the nursery business.

3. To realize that I am a nurseryman and a business man and ambitious to succeed, but that I am first an ethical man and wish no success that is not founded on the highest justice and morality.

4. To hold that the exchange of my goods, service and ideas for profit is legitimate and ethical, and that it shall be my aim that all parties in the exchange are benefited thereby.

5. To use my best endeavors to elevate the standards of the vocation in which I am engaged.

The above code was supplemented by addition of the following clause at a later convention:

"Thou shalt not steal thy competitor's salesman."

Some years ago a resolution was passed as follows:

Resolved, that on a salesman's terminating his engagement with a nursery he is to be given a letter of dismissal or of recommendation showing that his business relations are ended with his former employer, and that such letter be attached to contract with any new firm such salesman engages with, so that it may be available for inspection at any time.

If these general and specific features are strictly observed, it will conduce to harmony and insure the profit of all concerned. It is the general practice of the better firms when getting an application from a salesman having previous experience in nursery work, to write to his former employer to ascertain if party has settled with him and if such salesman is still under obligation, to refuse to employ him until he squares up his old account.

THE rose festival was held again this year at Riverton, N. J., by Henry A. Dreer, Inc., June 7 to 9, and the garden was reported in splendid condition for the event.

AMERICAN NURSERYMAN

[Registered U. S. Patent Office]

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

VOL. LXXI, No. 12 — **JUNE 15, 1940**

Published on the
first and fifteenth
of each month by the

AMERICAN NURSERYMAN
PUBLISHING COMPANY
508 South Dearborn Street,
Chicago, Illinois.

Telephone: Wabash 8194

* * * * * *

New York
Advertising Representative:
N. L. Huebsch
67 West 44th Street
Telephone: Murray Hill 2-4871

* * * * * *

Subscription Price:
$1.00 per year; outside
United States, $1.50;
Single Copies, 10c.

* * * * * *

Advertising Rates
on application.
Forms close five days
before date of issue.

* * * * * *

Entered as second-class matter December 14, 1933, at Chicago, Ill., under act of March 3, 1879.

CONTENTS

Safety Practices in Tree Work 5
By F. W. Strufe, Safety Director, Davey Tree Expert Co., Kent, O.

Landscape Labor Costs vs. Profits (illus.) 7
By Harold E. Hunziker, M. J. Hunziker & Sons, Niles, Mich.

Selection of Narrow-leaved Evergreens 11
By L. C. Chadwick, Associate Professor of Horticulture, Ohio State University, Columbus, O.

Excerpts from a Plantsman's Notebook 15
By C. W. Wood, Gladwood Gardens, Copemish, Mich.

This Business of Ours 20
By Ernest Hemming, President, Eastern Shore Nurseries, Easton, Md.

Diseases of Trees 22
By Leo R. Tehon, Head of Applied Botany and Plant Pathology, State Natural History Survey, Urbana, Ill.

Cover Illustration Notes 17

Editorial 2
—Organize the Office 2
—Sales Frankness 2
—Buying Helps Selling 2
—Another Code of Ethics 2

Rock Garden Society 9
For Northwest Plains 10
Notes from a Nurseryman's Wife 10
Heads Utah Association 14
—J. J. Porter (portrait) 14
Plants Sell Gasoline 14
Gardens Help Red Cross 14
Trees in New York City 14
Leaf Scorch 16
Towson Gardens (illus.) 17

American Association of Nurserymen 18
—West Point Trip 18
—Appropriations Bill 18
—Landscape Employees 18

Dr. Auchter's Assistant 18
Modify Jap Beetle Rule 19
White-fringed Beetle 19
C. C. C. Tree Planting 21
Camellia Anniversary 21
Hemlock Rust Control 24
Southwestern News 24
The Biggest Tree 25

Coming Events 26
—North Carolina Program 26
—Oklahoma Summer Meet 26

Form Florida Body 26
Rose Storage 27
Gardens on the Radio 27

Fruits and Berries 28
—New Pear Resists Blight 28
—Grape-berry Moth 28
—Blueberry Culture 28
—Plum-producing Areas 28

Borer Repellent 29
New Plant Patent 29

New Books and Bulletins 30
—Rehder's New Manual 30
—Modern Garden Design 30
—Bulletins Received 31
—Lily Yearbook 31
—Nut Growers' Report 31
—New York Garden 32
—Andorra Handbook 32
—Botany Book for Blind 32

Vitapane Price Rise 32
Catalogues Received 32

Obituary 33
—Adolph Kruhm 33
—Mrs. A. A. Kelly 33
—LeRoy Pottenger 33

Preview Roses at Fair 34
Motor Truck Scale 34

INDEX TO ADVERTISERS

Aeroil Burner Co. 34
American Association of Nurserymen 19
American Color and Chemical Co. 33
American Florist Supply 34
Anderson Open Hoe Co. 33
Andrews Nursery 29
Ariens Co. 33

Bagatelle Nursery 23
Bailey Nurseries, J. V. 25
Ball, Inc., Geo. J. 35
Bartlett Tree Expert Co., F. A. 29
Bergtholdt, Chris D. 27
Bobbink & Atkins 23
Boxwood Gardens 29
Burr & Co., C. R. 23

California Spray-Chemical Corp. 34
Chase Bag Co. 34
Chase Co., Benjamin 34
Cloverset Flower Farm 35
Cottage Gardens 29
Crystal Soap & Chemical Co., Inc. 34

Denison & Blair 27
Doty & Doerner, Inc. 27
Dow Chemical Co. 20
Dummett, Arthur 23

Evergreen Nursery Co. 25

Forest Nursery Co. 25
Foster Nursery Co. 29

Garden Shop, Inc. 35
Gardner Nurseries, Clark 34
Gardner's Nurseries 25
Gravely Mfg. Co. 34
Guenthner, Chas. L. 32

Hauck Mfg. Co. 33
Herbst Bros. 25
Hess' Nurseries 23
Hill Nursery Co., D. 25
Hobbs & Sons, C. M. 25
Hogansville Nurseries 29
Holton & Hunkel Co. 25
Horsford, William Crosby 23
Howard-Hickory Co. 29
Howard Rose Co. 26
Hunter, Geo. W. 32

Industrial Tape Corp. 21

Jackson & Perkins Co. 23

Kallay Bros. Co. 25
Kemp Mfg. Co. 21
Koster Co., Inc. 23

LaBars' Rhododendron Nursery 29
Lake's Shenandoah Nurseries 24
Leonard & Son, A. M. 34
Lovett, Lester C. 23

McGill & Son, A. 27
Meehan Co., Thomas B. 33
Michigan Peat Co. 33
Milton Nursery Co. 27
Moran, E. C. 33
Mount Arbor Nurseries 29

National Oil Products Co. 36
Natorp Co., W. A. 25

Oberlin Peony Gardens 32
Orenco Nursery Co. 27
Outpost Nurseries, Inc. 23

Perennial Nurseries 29
Peterson & Dering, Inc. 27
Portland Wholesale Nursery Co. 27
Princeton Nurseries 25
Process Color Printing Co. 34

Robinson, E. D. 25
Rototiller, Inc. 34

Scarff's Nurseries 29
Scotch Grove Nursery 25
Sherman Nursery Co. 29
Sherwood Nursery Co. 27
Smith Gardens 29
Smith Industries 33
Southern Nursery Co. 29
Storrs & Harrison Co. 22

Valley Evaporating Co. 29

Waynesboro Nurseries, Inc. 32
Weathered Oak Herb Farm 33
Westminster Nurseries 24
Willis Nursery Co. 34
Wonderland Nurseries 29
Woodruff & Sons, Inc., F. H. 33
Wyman's Framingham Nurseries 23

Announcing

PRE-CONVENTION NUMBER

Covers in full colors

See page 31

Prepare your advertisement early

"EVERY YEAR MORE PLEASED"

"Every year we are more pleased with the results of our advertising, and it is more than pleasant to see that every issue of the American Nurseryman is better and more interesting to read. Please stop our advertisement, as we are sold out for this spring. We will send our advertisement in again next fall." —Paul Offenberg Nursery Co., Columbus, O., May 22, 1940.

Safety Practices in Tree Work

Methods of Training Men and Precautions Followed to Prevent Accidents to Workers in Pruning, Repairing and Moving Large Trees — By F. W. Strufe

Tree work is terrifically hazardous. At least, that seems to be the opinion of the public and of most insurance underwriters. But in Ohio, and in other states, the industrial commissions classify many other types of employment as more dangerous, especially those of certain other industries that require men to work off the ground.

This is cause for some satisfaction, but not cause for much contentment. Tree workers have steadily reduced the hazards of their work, as proved by the downward trend of workmen's compensation rates in many states, but certainly none of us has done a perfect job.

The company that I represent put in its safety department about ten years ago and embarked upon a definite and continuous safety program. Safety records have now been kept for a period covering more than 7,000,000 man-hours of work. This, of course, has made it possible for us to know what types of accidents are most frequent and most serious and has shown us where to concentrate our efforts. However, while we have made drastic reductions in accidents of all types, we certainly have not yet approached the point of accident elimination.

When most companies become concerned about the number of accidents they are having and about the cost of those accidents, they usually decide that they should have a better safety experience and so arrange for an inspirational program. Is it likely that this emotional appeal alone can succeed? What are some of the things that can be done to eliminate accidents? A controlled inspirational program is one medium, but it should be supplemented by emphasis on foreman's responsibility. Still another is the elimination of specific hazards as shown by the accident records. Another is proper supervision, while the last is protection against those hazards that are recognized in the tree surgery field.

There is little doubt that in safety work, as in any other field, there is a definite need for statistics. Certainly, you would think little of the conclusion reached by a scientist unless he could back up his statement with suitable charts and figures. There is a limit, however. A safety man who is interested only in accident surveys of what happened last year is likely to be of little value in helping to eliminate accidents next month.

A program is a necessity and your program can be based only upon your own experience. The application of our experience might not reduce your accidents at all. An adequate survey is, consequently, important. For example, it would not be enough that we base our program entirely on a chart which, by referring to frequency of accidents, shows that seventeen per cent of our accidents are due to falls of persons, while another chart, based on cost and consequently severity of injuries, shows that eighty per cent of the cost of our accidents is due to falls of persons and, of that eighty per cent, forty-two per cent is due to falls from trees, while thirty-one per cent is traceable to ladders. Is it not apparent, then, that our emphasis, to a large extent, must be on the hazards that cause the greatest severity and, consequently, the greatest cost? There are some other factors that should receive consideration. It would be well to remember that it is the second-year or third-year man who has the accidents. The first year, a man is likely to be timid. His accident, if any, probably will be due to ignorance, or, shall we say, lack of supervision. The 4-year or 5-year man is usually more settled. He may have more responsibilities. He may have had an accident or near accident that opened his eyes. Then the second-year or third-year man is the one to watch. He is the show-off. Someone has told him that the law of gravity has been repealed. He puts on a free show for the natives and probably it will be a good one, but he may wake up with something worse than a headache.

We feel that the selection of men having the proper qualifications to perform, with satisfaction, the duties that our work requires has been largely responsible for our success in accident-prevention work. If you were asked to go on to the street and find an ideal tree surgeon, what would you look for? What qualifications should a man have? What should the mental requirements be? There are advantages and disadvantages to academic training. It seems hardly fair to say that the better educated man has the more alert mind, and alertness, to our way of thinking, is the principal thing—the all-important thing. A man who has mental alertness, coupled with physical coördination, will be capable of understanding and following instructions implicitly.

There is no place in our type of work for the absent-minded. There are many problems to be solved by even the youngest workman. In climbing a tree a man is entirely on his own. He must decide whether a certain limb should be trusted with his weight. He must make the decision.

Satisfactory mental qualifications are not enough. The strenuous nature of the work calls for high physical requirements. Size is not sufficient. In fact, size may sometimes be a handicap, but if a man is small, muscular development is absolutely necessary. For that reason, even though a man may be active for his size, it is necessary to select men who have plenty of stamina.

We use his chinning record almost exclusively to determine a man's muscular development. Sometimes we have found that the wiry individual has more strength per pound than his muscle-bound brother. It depends also to a large extent upon the type of work to which a man is to be assigned. In moving large trees, for example, if there were two men, one weighing 135 pounds and the other 165 pounds, all other things being equal, the heavier man should be more desirable.

Good physical condition is important and cannot be emphasized enough. Selection of men should include a medical examination. Ours is about the equivalent of a good insurance examination without exactly the same requirements. We pay only little attention to blood pressure because our physicians have found many cases of high blood pressure which upon re-examination showed a return to normal. On the other hand, we insist upon good hearing. Loss of hearing in one ear eliminates a man. The

reason is obvious. Suppose a man could not hear a shouted warning.

A complete hernia also eliminates a potential employee. He would find tree surgery nothing but a burden, for it is too difficult to keep a truss in place while climbing trees. The primary interest should be in those defects which are likely to handicap a man, make him accident-prone or be aggravated by his employment.

Before a workman should be assigned to a position and before he should be permitted to work in a tree, he should be trained in the safety measures that he will need. The extensiveness of this training is left to you. However, it is important that a new man know the proper safety practices. It is important that he form good safety habits when he first reports for work. Briefly, there are four elementary steps in training a man for any job. First, explain how to do the work safely. Second, show him the danger points in doing the job. Third, test him out—watch him while he does the work. Fourth, check him—be certain that he is following instructions and, after that, there is the necessity for constant supervision to make sure that he forms no bad safety habits. It is not difficult to work out the proper instructions for these four points, but the last is important and you can easily see, for that reason, that the success of a safety program rests squarely on the shoulders of your foremen.

We have pointed out to, and have convinced, our foremen that they are the keymen in our safety program. We make them responsible for accidents in their squads. Their advancement in our company is influenced by the safety experience of their men, but we go farther than that. We have had, during the past three years, a plan in operation which the Ohio department of safety and hygiene has given publicity. This plan, at first an experiment, is now an established policy. We pay a foreman a bonus for a good safety experience in his squad. The foreman receives $5 for each 5,000 hours his squad works without a lost-time accident. This bonus is graduated for consecutive 5,000-hour periods. He can make as much as $10 for each 5,000 hours worked by his squad. We also keep and print a record of squad hours worked without an accident. It is amazing to see the interest the men take in their foreman's safety record. It is my opinion that this plan is largely responsible for whatever success we have had in our safety program.

The management of any company has a direct responsibility in furnishing employees with proper equipment and tools which they are to use in their work. It is the policy of our company to provide only the best possible equipment obtainable. Price is no factor where safety is concerned. However, we constantly ask ourselves what should be considered safe equipment and what measures should be used in securing safe equipment. Isn't it true that a safe tool in one situation may be the dangerous one if used improperly? It is unfortunate that it sometimes takes a serious injury to point out the danger of some particular tool that is being used. For example, consider the improvement that has been made in one tool, the pole pruner. Most of you can remember the old-type pruner with a steel rod connecting the cutting lever to a handle in the middle of the pole. What an awkward piece of machinery that was! One of our men was killed while using such a pruner in clearing power wires. He was bringing the pruner up through the tree. Naturally, the handle was hooking almost every branch and his attention and concern were in getting the pruner through the tree. He forgot there were two ends to the pruner and when the top end hit the power wire, he never had a chance to remember. What was the company's reaction? It immediately secured pruners with bakelite rods to replace the steel ones. The company could have rested there. It could have decided that everything possible had been done to make that tool safe, but it wasn't satisfied. Finally, the handle and rod were removed entirely and a rope substituted. Now it is a far safer tool, but it is still being improved.

We purchase the best Manila hemp waterproof rope that can be secured, and yet one of our men had a serious injury last year because a rope broke. This should be impossible, but it happened. Here is what was found upon investigation. The operation, in charge of one of our older foremen, was a large one involving cavity work. There were several men at work and the cavities were being excavated by machinery. Each man was provided with a safety rope, but additional lines were needed to suspend the machine tools. So the foreman hauled forth some condemned safety lines which he had been storing in his basement with the intention of returning them to the warehouse later. One of our men wanted to inspect a cavity and, instead of crotching his safety rope, he climbed a rope which was supposed to have been used to hold tools only. The rope let go—the result, a broken back. Yes, the man should have known better, for the rope which he used had no place on that job.

To prevent the recurrence of such an accident, we call into our warehouse each old rope that is replaced. We do not permit a foreman to store his old ropes. They must be returned as soon as the new ones arrive. This is not only a good safety practice, but also good business.

A workman has every reason to believe that the tools with which he is provided are safe. The employer is largely and directly responsible when equipment lets go, but sometimes the best of equipment is abused by the workmen—ladders, for example. They may be permitted to fall; limbs or tools may be dropped on them. This weakens a ladder, and its usefulness is soon over. The stringers or sides of our ladders are made of Sitka spruce with no knots or flaws. The rungs are of seasoned second-growth hickory. Each ladder is checked carefully for flaws before it leaves the warehouse and is double-checked by the foreman before it is put into use in his squad. Ladders should not be painted. They should be coated with linseed oil so that flaws may be detected. Under no circumstances should more than three 10-foot sections of ladder be used together in our work. When a ladder is climbed, both hands and both feet should be used. Ascent and descent should be made facing the ladder. These are obvious things, but we have found that it is a violation of these primary rules that causes ladder accidents. We have the same rule on ladders that we have on safety lines. When a new ladder is sent to a foreman, the old ladder is returned to our warehouse.

[Concluded in next issue.]

THE offices of the Geneva Nursery Co., Geneva, N. Y., were damaged to the extent of $3,000 recently in a fire which swept a downtown business block.

Landscape Labor Costs vs. Profits

Study of Cost Finding as Applied to a Landscape Nursery Firm with Particular Reference to Labor Records and Estimates, Concluded from Preceding Issue — By Harold E. Hunziker

Even though overhead is an elusive factor, it is possible to be defined with absolute clearness and properly distributed, under an intelligent system, when honestly and faithfully carried out.

Charles Reitell, a manager and engineer, writes: "There is a reason for this lag in establishing standards and budgets for overhead expenses. In earlier days direct labor and direct material were by all odds the major elements in manufacturing costs. In addition, direct charges were easy to see. Overhead expenses, on the other hand, were considered of minor importance and were considered an unknown, elusive cost element to be 'tacked on' after the direct costs had been calculated."

Overhead expense today is rapidly becoming the dominant element in reselling costs. Unless the accounting system controls overhead, it is weak and fails to meet modern needs. Mr. Reitell points out that, first, definite named responsibility must be established for every overhead item found in the enterprise.

Second, overhead expenses must be set up in budgetary form related to specific amounts of measured performance.

Third, the building up of budgets must be a coöperative function in which foreman, superintendent, bookkeeper and owner all play a part.

Certain items like rent, taxes, insurance and depreciation remain constant regardless of the amount of sales. They constitute fixed overhead expenses.

When production goes up, these expenses known as variable overhead expenses will go up in like proportion. When production falls, they likewise go down.

Indirect labor, additional supervisors, clerks and expenses are typical items of the sort known as semivariable overhead expenses.

Mr. Surtees continues to show that the next step is the standardization of overhead. This is the most important element of three bases of costs. Unfortunately, it is the element that is least understood and, as I have said, the most slippery and elusive element of them all. Unless the principles that govern the proper application of overhead are thoroughly grasped, they will slip from proper control. It is rather amusing to hear of the many varied ways that nurserymen have of applying this item. One says he figures what his labor costs, to which he adds the wages of the workmen for the time they spend on the job, and that gives him the total cost. Then he adds a percentage to this total to cover overhead and profit. Many nurserymen follow this formula, but the percentages of overhead which they figure over the total cost of materials and labor vary all the way from twenty to 200 per cent.

"Still others use sliding scales of overhead, in some cases applied against the materials and in other cases applied against the labor. These scales are applied according to the size of the order, the smaller the overhead. And so goes the merry circle, and these varying methods are no doubt the cause of tremendous variations in prices. The trouble is that all these methods are more or less nothing more than guesswork. But there is not any reason in the world why this important element of overhead should be left to guesswork. Overhead, like labor, is based entirely on time. Managers, superintendents, salesmen, clerks, rent, electricity, etc., are all paid for at so much per hour, day, week or month. The two elements, labor and overhead, go hand in hand together, and therefore the only method to follow is to place the overhead entirely against the labor. In this way, all the expenses will be distributed in the right proportion, according to the amount of labor involved. A plant or an order that does not involve a great deal of labor should not bear the same burden as a plant or an order that involves a large amount of labor."

We all know that overhead is an unavoidable element of production and cannot be evaded. It is the bugbear in all cost research, and its specific and proper diffusion is the most difficult accounting nurserymen have to encounter.

As in production of other kinds, overhead in nurseries reaches from 100 to 200 per cent (and in many cases even more) of the direct labor; it naturally follows that it is actually more important than the direct labor. So you see, every effort should be made to have its cost applied as correctly as possible.

Profits.

The matter of profit desired is, of course, the privilege of the owner. It is a matter entirely at his own discretion, depending on the trade conditions, and so it is a factor that cannot easily be standardized. But the profit should be so placed that he can get a reasonable return for his investment over and above the salary he draws for operating his business. Unfortunately, the nurseryman, from the nature of his business, cannot turn over his capital so quickly as those who handle other forms of merchandise. He has to wait until his plants grow to salable sizes; so he is entitled, more than anyone else, to charge a fair rate of interest on his cost of production. If he borrows money, he has to pay six per cent to the bankers; so he is entitled to charge that rate, as, virtually, he is taking the part of the banker in lending his own money to the business.

Profit is the vital part of business and is the theme of this paper. Making sales without a profit is just wasted time and energy. "Any fool can sell below cost, but it takes a wise man, and a clever one, to sell his products at a fair, profitable rate, in face of all kinds of competition."

Some men believe that the only way to increase profits is to increase prices. This is often difficult to accomplish, particularly if you are known as a low-priced producer. It may be easier to reduce costs. Reducing wages simply in order to get more profits for oneself often works the wrong way. The morale of the employees is destroyed, and the result is often disastrous. The study and practice of cost finding will show where losses occur, and the reduction of costs will automatically increase your profits.

Nurseries often fail because of allowing their business to drift by a

persistent adherence to timeworn and inadequate methods. Keeping in mind new ideas is always a good business characteristic. This new idea of standardizing costs of materials, labor and overhead can be used to great advantage by all nurserymen. It will help to keep down losses and may even be the means of revitalizing a wobbly business.

Most nurserymen are deathly afraid of their competitors, but when making prices it is as well to forget all about your competitor, if you can. Find out the cost of your operations and stock; establish your prices from these costs, and try to stand by these prices. The habit which ninety per cent of the nurserymen follow, of setting their prices from the catalogues of their competitors, is absolutely wrong. You must always remember that profits only start where expenses end. Your expenses are incurred in your own nursery and not in the nursery of your competitors, who may be operating at a loss for some reason or other.

"It is a belief among nurserymen that they can afford to take orders in dull seasons at cost or less, the idea being that this will keep down the overhead and keep the nursery busy. Of course, it is always desirable to keep the nursery busy, but only when it can be done profitably. The practice of taking orders at dull-time low prices starts a vicious circle, which does nobody any good and demoralizes the industry. If all nurserymen based their prices according to cost and stood with those prices, the busy seasons would carry them over the dull seasons and yield a margin of profit besides."

Further from Mr. Surtees' book:

"Do not place too much importance on volume. A small business, operated at a profit, is better than a large one that barely breaks even. There is a world of difference between busyness and business. Very often the profits that could be made on a large order are eaten up in the expense of getting and executing it. It is much better to take an order for $250 at ten per cent profit than to take an order for $500 at only five per cent profit. While the net result is the same as far as cash profit made, the mental and nervous energies (commonly known as headaches) are considerably more on the larger order. Profit is the only part of the selling price that counts."

So many so-called estimators, in the nursery business, make an out-and-out guess as to the cost of the work to be performed. Many actually boast that they can tell, within a few cents, what any job will cost. These are the people who are opposed to cost finding. It is only natural, for they should not like their guesses to be proved wrong. They are likely to lose prestige and so will not readily work in harmony with any idea that may jeopardize their reputation.

Many nurserymen have risen from the ranks of employment to become owners. Some of them have been quite successful, but others have failed, through a lack of business knowledge. They wanted to be bosses themselves, from an erroneous idea that the owner reaped enormous profits from their (the employees') labor. So they became owners of small nurseries in order that they might have all the profits that they imagined their previous owners were making out of them. They are the ones who have not studied the principles which govern business, and so their minds are filled with impracticable ideas.

Mr. Surtees scouts the idea of keeping one's method a secret. He says: "The more a practical idea is diffused, the better it is for everybody. The practice of hiding one's method from a competitor, in the foolish idea that the knowledge gained by one firm will give it a higher prestige, very often works the other way. Today, nurserymen, as well as other industrialists, desire a uniformity in their methods, and it is hoped that this book will help in bringing about this ideal."

Forms.

I have worked out a complete estimate on the forms we use in our office. This was prepared in 1938, when a talk on this subject was given before the Michigan Association of Nurserymen. The prices quoted are from a reliable retail nursery catalogue and should show the prices at a fair figure with profit included. We won't argue about these, as this talk concerns itself with labor costs. The form reproduced in the preceding issue showed how details in estimating are worked out by applying Mr. Surtees' charts of labor costs.

One of the forms reproduced herewith shows the distribution of labor for landscape contracts and a division of operation so that a checkup will show at any time the progress a foreman is making. The office knows how much the job is estimated for, and should the work not be progressing so rapidly as it should, the foreman knows and an effort can be made to "push the job" along, to keep it within the estimated figures.

These records are also useful in recording operations to arrive at costs for similar operations later.

The other form reproduced herewith shows the weekly distribution of each man's activity. This we have found greatly to our advantage. For instance, in operating our commercial orchards, we found that men hired for landscape work were too costly to operate the orchards, and because we could not have men of the same caliber working at different wage levels, we soon found out, because of our labor records, that it would be best to discontinue the commercial orchard operations. This also applied to dairy cows for our own use. We found that milk was costing us, because of labor, prices twice that what we could buy it for.

So, to return to a summary of these forms, Mr. Surtees points out the simplicity of their operation makes them efficient. They save the cost of their installation and operation ten times over. As a matter of fact, Mr. Surtees, in one instance, by the use of these forms, turned a losing proposition into a profitable one, without any increase in sales, reductions in wages or increase of clerical staff. They stopped so many leaks that the cost of operations was reduced all around.

The labor forms reach down to the very roots of all work and show up all waste and discrepancies at their source. To the progressive nurserymen, their use is strongly recommended.

To summarize the usefulness of operating by means of labor reports, the following outstanding points are noted:

1. They provide information for the distribution of the pay roll.
2. They show the amount of time worked and the amount of work done.
3. They give the amount of direct labor to be charged against a job or client.
4. They give the basis for establishing the rate or overhead to be charged against each job.
5. The management knows where every man worked, when he worked and what he was paid.
6. They are essential to the esti-

mator by giving him facts which he can use, instead of guessing.

7. Finally they stop many, many leaks and so lead to more profitable operating.

In connection with your questioning minds about adopting these methods to your firms' operations, I have this to say: You cannot teach people successfully by pumping things into them, but, rather, you get excellent results by providing the opportunity, the encouragement and the inspiration for people to grow and to show their innate possibilities. Your foremen will grow to see the sense to this outline and they will feel a part of the organization by their share in the operations.

Just as the small boy asks, "How am I doing, pop?" the foreman wants to know how he is doing. So we set the standards for each foreman and his gang's operation as well as all the operations of the whole nursery, and we can constantly compare performance with standard as shown on the reports. These records are simple, and a foreman gets so used to them that anything exceptional sticks out like a sore thumb.

It seems to me that it is a good idea to let your foremen "in" on your operations and let them know always that their job, your job, my job and the prosperity of the company depend upon each and every one of us doing our work to the very best of our ability.

Profits in the long run are the difference between revenue and costs. Revenue, in the main, is a sales department responsibility. If the nursery costs are further studied, it is amazing but true that their amount and their control, to a great extent, fall upon the foreman. When it comes to nursery costs, other than for material, fifty to sixty per cent or even more of the total comes under the control of the foreman.

Our firm has no magic to offer. It has no favorable circumstances, but we do seem to see light in this new scientific treatment of labor costs and their application to the services we sell.

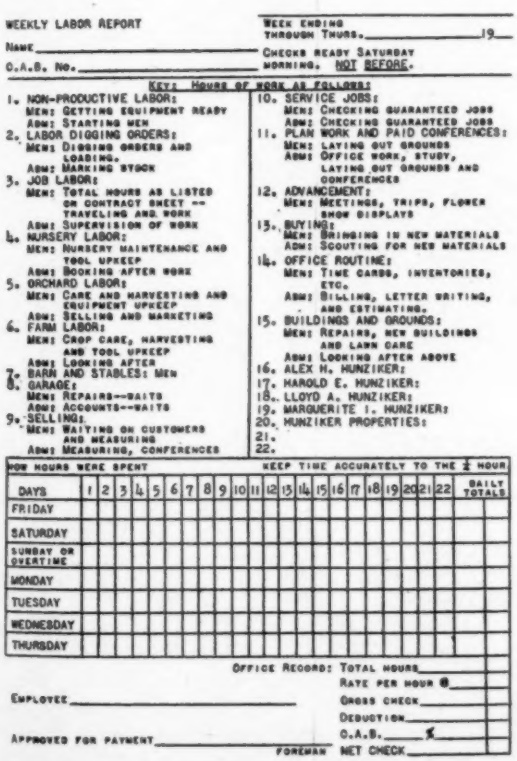
It seems to us that an unsafe, disorderly operated nursery is an indication of an unsafe, disorderly mind. It seems to us that we must heed the suggestions of cost accounting and apply them to our business.

In our office hangs this motto of Daniel H. Burnham: "Make no little plans. They have no magic to stir men's blood and probably themselves will not be realized. Make large plans, aim high in hope and work, remembering that a noble logical diagram once recorded will never die, but long after will be a living thing, asserting itself with ever-growing insistency. Remember that our sons and grandsons are going to do things that will stagger us."

"Let your watchword be order and your beacon beauty."

ROCK GARDEN SOCIETY.

Officers of the American Rock Garden Society, elected at the annual meeting, held at Greenwich, Conn., May 20 and 21, are as follows: President, Walter Blair, Tarrytown, N. Y.; first vice-president, T. H. Everett, of the New York Botanical Garden; second vice-president, Miss Elizabeth Lawrence, Raleigh, N. C.; third vice-president, J. J. Grullemans, Mentor, O.; fourth vice-president, E. L. Reber, Seattle, Wash.; secretary, Mrs. D. E. Hansell, Summit, N. J.; treasurer, Harold A. Nomer, Cold Spring Harbor, N. Y. Directors elected for three years are Mrs. C. L. Houghton, Chestnut Hill, Mass.; J. M. Hodson, Greenwich, Conn., and Theodore M. Knappen, Washington, D. C.



WEEKLY LABOR REPORT

NAME _____ O.A.S. No. _____

WEEK ENDING THROUGH THURS. _____ 19__

CHECKS READY SATURDAY MORNING. NOT BEFORE.

KEY: HOURS OF WORK AS FOLLOWS:

1. NON-PRODUCTIVE LABOR:
   MEN: GETTING EQUIPMENT READY
   ADM: STARTING MEN
2. LABOR DIGGING ORDERS:
   MEN: DIGGING ORDERS AND LOADING.
   ADM: MARKING STOCK
3. JOB LABOR:
   MEN: TOTAL HOURS AS LISTED ON CONTRACT SHEET -- TRAVELING AND WORK
   ADM: SUPERVISION OF WORK
4. NURSERY LABOR:
   MEN: NURSERY MAINTENANCE AND TOOL UPKEEP
   ADM: BOOKING AFTER WORK
5. ORCHARD LABOR:
   MEN: CARE AND HARVESTING AND EQUIPMENT UPKEEP
   ADM: SELLING AND MARKETING
6. FARM LABOR:
   MEN: CROP CARE, HARVESTING AND TOOL UPKEEP
   ADM: LOOKING AFTER
7. BARN AND STABLES: MEN
8. GARAGE:
   MEN: REPAIRS--BOATS
   ADM: ACCOUNTS--BOATS
9. SELLING:
   MEN: WAITING ON CUSTOMERS AND MEASURING
   ADM: MEASURING, CONFERENCES
10. SERVICE JOBS:
    MEN: CHECKING GUARANTEED JOBS
    ADM: CHECKING GUARANTEED JOBS
11. PLAN WORK AND PAID CONFERENCES:
    MEN: LAYING OUT GROUNDS
    ADM: OFFICE WORK, STUDY, LAYING OUT GROUNDS AND CONFERENCES
12. ADVANCEMENT:
    MEN: MEETINGS, TRIPS, FLOWER SHOW DISPLAYS
13. BUYING:
    MEN: BRINGING IN NEW MATERIALS
    ADM: SCOUTING FOR NEW MATERIALS
14. OFFICE ROUTINE:
    MEN: TIME CARDS, INVENTORIES, ETC.
    ADM: BILLING, LETTER WRITING, AND ESTIMATING.
15. BUILDINGS AND GROUNDS:
    MEN: REPAIRS, NEW BUILDINGS AND LAWN CARE
    ADM: LOOKING AFTER ABOVE
16. ALEX H. HUNZIKER:
17. HAROLD E. HUNZIKER:
18. LLOYD A. HUNZIKER:
19. MARGUERITE I. HUNZIKER:
20. HUNZIKER PROPERTIES:
21.
22.

HOW HOURS WERE SPENT — KEEP TIME ACCURATELY TO THE ¼ HOUR

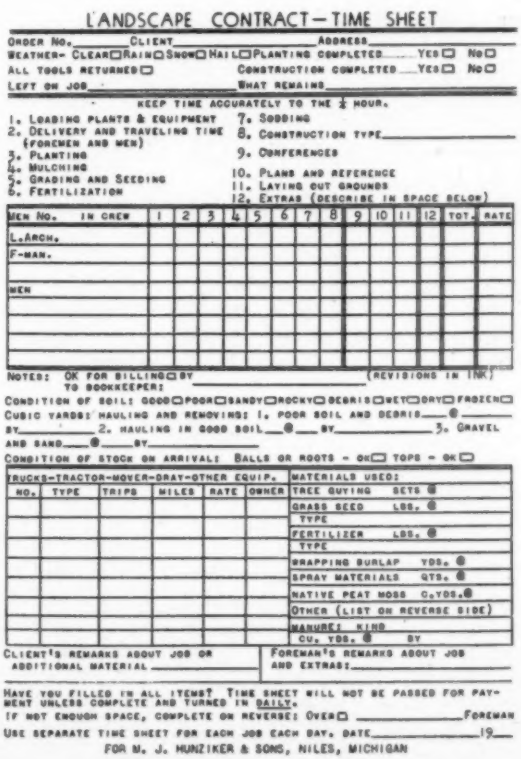
DAYS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	DAILY TOTALS
FRIDAY																							
SATURDAY																							
SUNDAY OR OVERTIME																							
MONDAY																							
TUESDAY																							
WEDNESDAY																							
THURSDAY																							

OFFICE RECORD: TOTAL HOURS _____ RATE PER HOUR @ _____ GROSS CHECK _____ DEDUCTION _____ O.A.S. _____ % NET CHECK _____

EMPLOYEE _____

APPROVED FOR PAYMENT _____ FOREMAN

Individual Weekly Labor Distribution Report.



LANDSCAPE CONTRACT—TIME SHEET

ORDER NO. _____ CLIENT _____ ADDRESS _____

WEATHER— CLEAR ☐ RAIN ☐ SNOW ☐ HAIL ☐ PLANTING COMPLETED ____ YES ☐ NO ☐

ALL TOOLS RETURNED ☐ CONSTRUCTION COMPLETED ____ YES ☐ NO ☐

LEFT ON JOB _____ WHAT REMAINS _____

KEEP TIME ACCURATELY TO THE ¼ HOUR.

1. LOADING PLANTS & EQUIPMENT
2. DELIVERY AND TRAVELING TIME (FOREMEN AND MEN)
3. PLANTING
4. MULCHING
5. GRADING AND SEEDING
6. FERTILIZATION
7. SODDING
8. CONSTRUCTION TYPE _____
9. CONFERENCES
10. PLANS AND REFERENCE
11. LAYING OUT GROUNDS
12. EXTRAS (DESCRIBE IN SPACE BELOW)

MEN NO. IN CREW	1	2	3	4	5	6	7	8	9	10	11	12	TOT.	RATE
L. ARCH.														
F-MAN.														
MEN														

NOTES: OK FOR BILLING ☐ BY _____ (REVISIONS IN INK) TO BOOKKEEPER:

CONDITION OF SOIL: GOOD ☐ POOR ☐ SANDY ☐ ROCKY ☐ DEBRIS ☐ WET ☐ DRY ☐ FROZEN ☐

CUBIC YARDS: HAULING AND REMOVING: 1. POOR SOIL AND DEBRIS ____ @ _____ BY _____ 2. HAULING IN GOOD SOIL ____ @ _____ BY _____ 3. GRAVEL AND SAND ____ @ _____ BY _____

CONDITION OF STOCK ON ARRIVAL: BALLS OR ROOTS - OK ☐ TOPS - OK ☐

TRUCKS—TRACTOR—MOVER—DRAY—OTHER EQUIP. NO.	TYPE	TRIPS	MILES	RATE	OWNER

MATERIALS USED:

TREE GUYING	SETS @
GRASS SEED TYPE	LBS. @
FERTILIZER TYPE	LBS. @
WRAPPING BURLAP	YDS. @
SPRAY MATERIALS	QTS. @
NATIVE PEAT MOSS	C. YDS. @
OTHER (LIST ON REVERSE SIDE)	
MANURE: KIND	
	CU. YDS. @ BY

CLIENT'S REMARKS ABOUT JOB OR ADDITIONAL MATERIAL _____

FOREMAN'S REMARKS ABOUT JOB AND EXTRAS? _____

HAVE YOU FILLED IN ALL ITEMS? TIME SHEET WILL NOT BE PASSED FOR PAYMENT UNLESS COMPLETE AND TURNED IN DAILY.

IF NOT ENOUGH SPACE, COMPLETE ON REVERSE: OVER ☐ _____ FOREMAN

USE SEPARATE TIME SHEET FOR EACH JOB EACH DAY. DATE _____ 19__

FOR M. J. HUNZIKER & SONS, NILES, MICHIGAN

Time Sheet Used by Foreman on Job.

For Northwest Plains

Attempting to name a dozen shrubs and a dozen perennial flowers adapted to conditions in the northwest plains area and possessing impressive merit, but seldom seen in prairie gardens, W. R. Leslie, superintendent of the Dominion experimental station, Morden, Manitoba, found the only difficult part of the task was to stop at the dozen, in one of his recent interesting news-letters.

Roses, by popular assent, head the list of shrubs. Three shrubby varieties are particularly pleasing, Altai, Betty Bland and Grootendorst Supreme. Altai is early, single, large and pale yellow with golden center. Betty Bland is double pink, borne on red canes. Groodendorst Supreme is an all-summer bloomer of carnation-like flowers, rich red in color.

Fragrant viburnum, or Viburnum Carlesii, is highly esteemed in the east for its pink, waxy flowers, which are borne in numerous clusters and are delightfully fragrant. It is best to place this shrub in a well sheltered nook in the northwest.

Sweetberry honeysuckle, or Lonicera cærulea, bears edible blue berries. Twig, bark and foliage impart a purple cast. The arching branches make a rounded pleasing figure.

In mock oranges, Virginal and Mount Blanc have been favorites. Girandole is suggestive of Virginal, but more branching and bushy. Glacier is quite double in flower.

Spiræa trilobata, the three-lobe spiræa brings to mind a maidenhair fern. The large-spike spiræa, or Spiræa Menziesii macrothyrsa, is notable for its large rose-pink spikes of bloom produced throughout the summer. It is a rampant grower and new shoots often attain a height of over five feet at Morden.

In European red elder two forms are distinctive, Sambucus racemosa tenuifolia, with finely and deeply cut foliage, and S. racemosa plumoso-aurea, with golden cut leaves.

Spiny caragana, C. spinosa, is abundantly hardy, nonsuckering, armed with long spines and attractive in bloom.

In the redvein crabs, Scugog is winning favor. The fruit is large for a crab apple and excellent for cooking. The blossoms are red.

Amoor Maackia, from Manchuria, imparts an acacia touch to the prairie plantings. The spikes of pea flowers are an ivory hue with yellow eye. New Prestoniæ lilacs, which are villosa and Josikæa crossed with reflexa, include Hiawatha, red; Redwine, carmine; Dawn, pale pink; Coral, rich clear pink; Swanee, white, and Royalty, rich purple.

Amoor Tamarix, with rich rose-pink blooms, is the most feathery of hardy shrubs.

Swedish linden may be considered as a slow-growing tree. It tends to many branches with red-brown bark. In bloom it emits penetrating sweet fragrance. The rounded large shrub, or small tree, is colorful in the dormant season.

A short list of herbaceous perennials that deserve widened employment in the northern great plains area was also given by Mr. Leslie.

The Caucasian lily, Lilium monadelphum, is early and comparatively tall and produces many large, shapely, fragrant, pure yellow blooms.

The pale fritillary, Fritillaria pallidiflora, is another early bloomer, with large distinctive flowers.

Rock aster, Aster alpinus, is available in a number of named varieties. Flowers are large and of open countenance. This plant is esteemed in the rock garden and in the mixed border.

The clematis-flowered columbine, Aquilegia clematiflora, is different from the well known long-spurred type, being starlike and dainty. Mrs. Nicholls is a pleasing long-spurred variety, in white and blue combination.

Ixiolirion is an early lilylike plant of slender stature, bearing blue flowers with recurved petals. The plants wither away aboveground in early summer.

St.-Bruno's-lily, Anthericum Liliastrum, is suggestive of ixiolirion, but the flowers are white. The two combine well. Unfortunately, both are fleeting.

White false dragonhead, Physostegia alba, is one of the perennials which bloom most of the summer. This form with white flowers is more impressive than the more common mauve-pink type. These plants are quite drought-resistant.

There are many bellflowers. Campanula garganica is of lowly stature, with heart-shaped leaves and numerous open-faced starlike blue flowers.

Morden Pink is a bud sport of the wand lythrum, Lythrum virgatum, bearing bright pink blooms in stately spikes from June until frost.

Beebalm hybrids produced by Hubert Hine, from the native pollinated with the red Oswego beebalm, are valued for scented blooms in various shades of red, pink, blue and purple.

Gypsophila pacifica is a tall open plant, bearing pink single flowers, which open as the common Gypsophila paniculata concludes its season. This later larger form is useful in bouquets, and the plants give a touch of airiness to the border.

Concluding the season are the various autumn asters, including the New England, the Belgian and the lævis hybrids. At the Morden station it is not unusual to have a bold display of bloom in the aster group at the end of October. Lil Fardell is a named red sort that is much admired.

NOTES FROM A NURSERYMAN'S WIFE

Probably no fruit is regarded with more affection or figures more in story and legend than the apple. We read that Fifth avenue was once an apple orchard all the way from Twenty-third street; that the apple that Eve ate was not an apple at all ("fructum" was transcribed "pomum," which means both fruit and apple); that, according to John Burroughs, the apple is the fruit of youth, and when you cease to crave apples you are no longer a boy, either in heart or years, and finally that Johnny Appleseed, who "befriended the white people and the Indians, preached the Gospel and set out the first nurseries and apple orchards," represents America at her unself-seeking, beauty-loving, foresighted best.

* * *

A cottonwood tree in Ohio broke into print recently by having a misplaced heart less than two and one-half inches from one side of the outer circumference.

* * *

We like the delicate sentiment shown by an eighteenth-century writer who addresses his lady-love as "My dear little shrub, my arbutus, my evergreen."

Selection of Narrow-leaved Evergreens

Fourth of a Series of Articles Similar to the Treatment of Woody Deciduous Ornamental Plants in "Compiling a New Nursery List"—By L. C. Chadwick

The medium types of narrow-leaved evergreens are another useful and indispensable group of ornamental plants for landscape purposes. Within this size group are included those types that attain a height of approximately six to nine feet. It is possibly more difficult to classify properly the narrow-leaved evergreens in this group than any of those previously discussed. A considerable number of the plants that will be included are at maturity definitely outside the size limits of this group. Either because their growth is so slow or they seldom reach their mature size in landscape plantings, they should for all practical purposes be included in this group instead of the one next larger. With regard to a considerable number of the plants this fact will be mentioned in the discussion.

In addition to the variation in size of the plants in this group, they also present considerable variation in rate of growth, from slow to rapid, and in habit of growth. Wide-spreading, globose or round-headed, either with stiff spreading horizontal or drooping branches, and narrow erect, columnar and pyramidal types are common. This extreme variation in habit of growth lends to their need and use in landscape plantings. Most of the types included in this group are too large for foundation planting except at the corners of the house and occasionally where they do not interfere with views from the windows. Their larger height lends to their use as hedges, screens or border plantings to give privacy. Many of the plants in this group also make fine individual specimens and can be used in this way where conditions warrant.

As with the preceding groups, few types other than the green foliage forms are placed on the selected or secondary lists. Some of the best of the blue and yellow foliage forms are included in the secondary list, and they can be used in a limited way where a variation of foliage color is desired. The number of these off-color foliage plants should be greatly restricted in the landscape planting.

The number and distribution of the plants between the three classes is approximately the same for this group as for the last two groups. Seventy-seven plants are listed. This undoubtedly does not include all the known varieties or horticultural variations in the trade which have no approved standing. It does include those that are common and many that are rare. For a few of the plants listed in the discard list, the name has appeared in trade literature and the plants apparently existed for a time. Perhaps these plants have since been renamed, reclassified or discarded, and consequently the original name, which had no standing, should be discarded or appropriately applied to a definite plant type. Eight plants are placed in the selected list, eighteen in the secondary list and fifty-two in the discard list. As mentioned previously in these articles, those plants on the selected list should find most abundant use because of their good growth habit, attractive foliage, hardiness and adaptability and freedom from pests. Those on the secondary list show some outstanding characteristics and consequently will be of use where these characteristics will best serve the requirements of the landscape composition. They should be propagated and used in limited numbers. As far as my observations go and as verified by other plantsmen, the types on the discard list have relatively little or no value. The characteristics that they exhibit, if they are desirable in a landscape composition, can be furnished more satisfactorily by other species or varieties listed in the selected or secondary groups.

GROUP 5—MEDIUM TYPES (6 TO 9 FT.)

SELECTED LIST.

Chamæcyparis obtusa gracilis—Slender Hinoki cypress.
Chamæcyparis pisifera filifera—Thread retinispora.
Taxus cuspidata (selected)—Japanese yew.
Taxus cuspidata columnaris—Adams yew.
Taxus media hicksi—Hicks yew.
Thuja occidentalis rosenthali—Rosenthal arborvitæ.
Thuja plicata atrovirens.
Tsuga canadensis pendula (sargenti)—Sargent weeping hemlock.

SECONDARY LIST.

Chamæcyparis pisifera filifera aurea.
Chamæcyparis pisifera squarrosa.
Juniperus chinensis pyramidalis.
Juniperus communis ashfordi.
Juniperus communis hibernica.
Juniperus communis kiyonoi.
Juniperus squamata meyeri.
Pinus mugo (montana).
Taxus baccata fastigiata.
Taxus baccata fastigiata aurea.
Taxus baccata washingtoni.
Taxus cuspidata fastigiata.
Taxus cuspidata pyramidalis.
Thuja koraiensis.
Thuja occidentalis robusta (sibirica, wareana).
Thuja occidentalis spiralis.
Thuja orientalis conspicua.
Thuja orientalis Kallay's Golden.

PLANTS TO DISCARD.

Chamæcyparis lawsoniana darleyensis.
Chamæcyparis lawsoniana.
Chamæcyparis obtusa crippsi.
Chamæcyparis obtusa filicoides.
Chamæcyparis obtusa gracilis aurea.
Chamæcyparis obtusa lycopodioides.
Chamæcyparis lawsoniana nova.
Chamæcyparis pisifera filifera aureo-variegata.
Chamæcyparis pisifera plumosa flavescens.
Chamæcyparis pisifera squarrosa dumosa.
Chamæcyparis pisifera sulphurea.
Juniperus chinensis oblonga.
Juniperus chinensis pendula.
Juniperus chinensis pyramidalis variegata.
Juniperus chinensis pyramidalis glauca.
Juniperus chinensis sylvestris.
Juniperus chinensis variegata.
Juniperus communis
Juniperus communis aurea.
Juniperus communis columnaris.
Juniperus communis cracovia.
Juniperus communis grayi.
Juniperus communis oblonga pendula.
Juniperus communis suecica.
Juniperus rigida.
Juniperus squamata wilsoni.
Juniperus virginiana tripartita.
Picea abies (excelsa) repens.
Taxus baccata compacta.
Taxus baccata erecta.
Taxus baccata erecta aurea.
Taxus baccata ericoides (michelli).
Taxus baccata fastigiata variegata.
Taxus baccata variegata.
Taxus media.
Taxus media dumorti.
Taxus media sewelli.
Thuja occidentalis columbia.
Thuja occidentalis columbia compacta.
Thuja occidentalis cristata.
Thuja occidentalis ellwangeriana.
Thuja occidentalis ellwangeriana aurea.
Thuja occidentalis filiformis.
Thuja occidentalis globosa (spihlmanni).
Thuja occidentalis lutea.
Thuja occidentalis lutescens (wareana lutescens).
Thuja occidentalis pendula.
Thuja occidentalis plicata (mastersi).
Thuja occidentalis reidi.
Thuja occidentalis vervæneana.
Thuja orientalis bonita.
Thuja orientalis texana glauca.

Chamaecyparis obtusa gracilis, slender Hinoki cypress.—It has been mentioned previously that few of the chamæcyparis seem worthy of a place on the selected list. If this list were being prepared entirely for Ohio con-

ditions, I should say that the slender Hinoki cypress would not be placed higher than the secondary list. However, many plants of this variety seen in New York, New Jersey and Rhode Island seem sufficiently satisfactory and interesting to place it on the selected list. In habit of growth this variety becomes a compact, pyramidal form, bearing slightly pendulous branchlets and dark green foliage. The plant grows slowly and seems to be somewhat more hardy than the species, although in central Ohio it is not unusual to find it rather severely burned.

Other varieties of Chamæcyparis obtusa within this group seem to rate no better than the discard list. Most common of these varieties are Chamæcyparis obtusa crippsi, a slow-growing conical form with pale yellow foliage, and Chamæcyparis obtusa gracilis aurea, a gold-tipped foliage form of the variety. The yellow foliage color is limited mostly to the young growth; by fall the color is nearly green. Neither one of these plants seems so hardy or so satisfactory as the variety Chamæcyparis obtusa gracilis.

Chamaecyparis pisifera filifera, the thread retinispora, is one of the best, if not the best, of all the Chamæcyparis pisifera types. In habit of growth it becomes a broad spreading bush or a pyramidal small tree reaching a height of twenty feet or more. This mature size, of course, brings it well outside the range of this size group, but the smaller sizes are much more common and group 5 seems its best placement. The branches are long, slender and pendulous, which give it more or less of a threadlike appearance. The individual leaves are small, loosely arranged and sharply pointed.

The thread retinispora is perfectly hardy, and because of its looser habit and less compact foliage, it does not burn out in the inner part of the plant so much as most of the other Chamæcyparis pisifera varieties. It does, however, have a tendency to become loose and ragged with age. The form Chamæcyparis pisifera filifera nana, given in group 4, is considered by many as being superior to the common variety. There seems to be considerable confusion of what constitutes this subvariety nana. One recognized authority describes it as a low form less than three feet high, while another describes it as a plant becoming fourteen or more feet high.

Most of the other chamæcyparis in this group are relegated to the discard list. Some are common in the trade and others are not. Two forms are placed on the secondary list. Personally I feel there is little need or use for these two plants, although they do have a certain appeal. Chamæcyparis pisifera filifera aurea is a form of the thread retinispora with yellow young foliage, becoming nearly golden-yellow when grown in full sun. It is of slower growth and usually more compact than the type. Chamæcyparis pisifera squarrosa becomes much the same size as the thread retinispora at maturity and is characterized by having soft glaucous, silvery-green, awl-shaped or juvenile foliage. It is not entirely hardy in the northern part of the northeastern states and often shows considerable burning in the inner portion of the plant in the midwestern states. However, it is said to do well in some portions of eastern Pennsylvania and New Jersey. Where it is satisfactory it can be used to give a foliage texture and color obtainable in few other evergreen plants.

Taxus cuspidata (selected), Japanese yew.—In the last article considerable discussion was given relative to the yews and some specific comments relative to Taxus cuspidata intermedia. It is probably true that the plants carried in the trade as Taxus cuspidata intermedia will not often attain the height range of this size group. There are both spreading and upright forms of the Japanese yew that would range from six to nine feet, and these are well worth growing even though they cannot be distinguished by a varietal name. The best of the spreading forms and possibly additional upright forms should be selected. However, careful selection should be stressed, and if an appropriate name or names can be applied, so much the better. Considerable confusion now exists in the nomenclature of the forms of Japanese yew. Some pertinent remarks regarding the situation will be given in a later article.

Taxus cuspidata columnaris, Adams yew.—The nomenclature of this variety has no technical recognition so far as I know, and the plant is undoubtedly carried in some nurseries under an entirely different name. What terminology is correct has not yet been made clear by committees and individuals in whose hands rests the decision of the correct nomenclature of many of our ornamental plants. As this plant occurs in some nurseries, it is an upright type with a central leader and rather stiff, nearly horizontal branches. The foliage is dark green. This type gives promise as being especially useful for hedge purposes and as an upright compact specimen. Other names which have been applied to the same plant or plants with similar growth habits are Taxus cuspidata fastigiata, Taxus cuspidata, Moon's Type, Taxus cuspidata parsoni and Taxus cuspidata pyramidalis.

Taxus media hicksi, the Hicks yew, is one of our common yews. While often described as a compact, columnar plant, it requires considerable pruning in the nursery to make it such. When allowed to grow naturally it develops many side branches and becomes a narrow vase shape, bare at the base. Plants of this natural form are susceptible to considerable damage or unsightliness from heavy snows. In many nurseries it is now being grown with a central leader with the side branches closely sheared. In this form it is decidedly formal and often recommended for closely clipped hedges. While satisfactory when used in this way, the hedge does not "fill up" so readily as the Adams yew, for example. The dark green foliage and wide-spreading leaves of the Hicks yew add to its attractiveness. By considerable trimming this variety can also be grown into a dwarf compact globose form.

Mention might be made here of two other taxus names which are occasionally seen listed. These are Taxus cuspidata nigra, described as a dark green foliage form of the spreading Japanese yew, and Taxus cuspidata sieboldi, which is considered by most authorities as a synonym of Taxus cuspidata. The variety Taxus cuspidata nigra seems to have no official recognition among botanists. The names Taxus media dumorti and Taxus media sewelli have appeared at one time or another in the literature, but the plants associated with these names are not known by the author. Since they do not now appear to be listed by nurserymen in any number, if at all, the names have been placed on the discard list.

A number of the Taxus baccata varieties are in this group, but they are all placed on either the secondary or discard list. This is because of the fact that all these varieties are more or less tender. The seemingly more

reliable and interesting varieties on the secondary list are the Irish yew, Taxus baccata fastigiata, a narrow columnar form with crowded upright branches and fine spirally spreading dark green leaves; Taxus baccata fastigiata aurea, a yellow foliage form of the above variety, and Taxus baccata washingtoni, a large bushy plant with yellowish young foliage. The variety Taxus baccata erecta, which is sometimes confused with the Irish yew, differs from it in its more bushy habit of growth and shorter and narrower needles.

Thuja occidentalis rosenthali, Rosenthal arborvitæ.—There are so many varieties of medium-size arborvitæs that it is difficult to select a few of the best. One of the best is the Rosenthal arborvitæ, but nearly as good, or under some conditions equally good or better, are Thuja occidentalis robusta and Thuja occidentalis spiralis. The Rosenthal arborvitæ, is a broad pyramidal form with dark green, somewhat vertically arranged foliage, and of relatively slow growth. Its preference over the Siberian or Ware arborvitæ is due mainly to its better color and its less susceptibility to red spider. The heavy fruiting characteristic of the Rosenthal arborvitæ is an objectionable factor to some plantsmen.

Thuja occidentalis robusta, also listed as Thuja occidentalis sibirica and Thuja occidentalis wareana, is a variety of similar growth habit as the Rosenthal arborvitæ, but differing from it by the close bluish-green foliage. It is one of the most susceptible varieties of arborvitæ to red spider. It does stand winter conditions better than most varieties of the common arborvitæ.

Thuja occidentalis spiralis may be larger than the size limits of this group at maturity, but it is of slower growth than many of the other narrow upright arborvitæs. It is much narrower at the base than the Rosenthal or the Siberian arborvitæs. Thuja occidentalis spiralis makes a compact plant with striking twisted branchlets. Although this variety is quite satisfactory, it is usually not so reliable as the slightly larger leading upright varieties, which will be discussed in group 6.

A considerable number of other varieties of Thuja occidentalis are placed on the discard list. These vary considerably in size and form, some coming in the lower limits of the group at maturity, while others may even reach group 6 at maturity. Many of these varieties are difficult to allot to definite size groups. Space does not allow the discussion of these varieties, but a glance at the list will show that most of the types are grown only in small quantities in many of the better nurseries.

Most of the varieties of the Oriental arborvitæ are not reliably hardy. Two of the yellow foliage forms which seem reliable under some conditions and are of limited use find a place on the secondary list.

Thuja plicata atrovirens.—There is no question about the fact that at maturity this plant gets much larger than the limits of this group. It will, however, be under ten feet in height for a considerable number of years, and it is well to distinguish its slower, more compact growth from the rank habit of the species. Thuja plicata atrovirens is one of the best of the arborvitæs. The habit of growth is broad, pyramidal and compact. The foliage is mostly dark green, although slightly yellow at the tips. It holds its color well during the winter months.

Tsuga canadensis pendula, the Sargent weeping hemlock, will not find so extensive use as most of the other plants on the selected list, but its unusual character would seem to warrant its placement. Considerable variation is seen in the plants now grown as Tsuga canadensis pendula. Part of this is due to a definite variation and part to methods of training in the nursery. If a leader is not staked upright when the plant is young, it becomes much more prostrate than plants considered typical of the Sargent weeping hemlock. In typical form it has a flat broad top and drooping branches. Plants are much wider than high. This variety should be of use in large rock gardens and as lawn specimens.

Another distinct, but less common, weeping form of the Canadian hemlock is a plant of nearly normal growth except for the fact that the branches are pendulous. This type has distinct possibilities, but undoubtedly will become larger than the size limits of this group.

There are a number of plants on the secondary and discard lists which should be commented on briefly. None of the junipers in this size group rates a place above the secondary list. It is common to find the spiny Greek juniper listed as Juniperus excelsa stricta. L. H. Bailey, in his book, "The Cultivated Conifers," states the plant grown in the north under this name is Juniperus chinensis pyramidalis. While the description given does not exactly fit the plant commonly carried in the nurseries as the spiny Greek juniper, it is probable that this name will be accepted. The spiny Greek juniper is fairly satisfactory as a young plant, but it does not grow old gracefully. The plant is better in the east than it is in the midwest, where in many localities it would be placed on the discard list. The other varieties of Juniperus chinensis in this size group do not have much to commend their use.

A good many varieties of Juniperus communis are in this medium group of evergreens. It is true that some of them, such as the Irish juniper, may become twenty feet high with age, but this size is rather unusual in landscape plantings. It is questionable which of the common varieties are the best. In the south Juniperus communis ashfordi and Juniperus communis kiyonoi seem to do quite well. The few plants seen in the midwest have not appeared superior to Juniperus communis hibernica, the common Irish juniper. While the Irish juniper has been grown for a long time and is common in landscape plantings, its popularity has waned in recent years. Typical of all the Juniperus communis types is the extensive "pulling apart" of plants subjected to heavy snows. Recently the juniper webworm has become a troublesome pest of all of the closely compact, upright varieties of Juniperus communis, the spiny Greek juniper and the Meyer juniper. Control measure of this pest consists of a spray by mid-May of five pounds of dry lime-sulphur and eight pounds of lead arsenate to 200 gallons of water. The insecticide must be applied with high pressure. In some sections, plantsmen prefer Juniperus communis suecica to the Irish juniper because the early spring growth is somewhat better and the branchlet tips are drooping.

Not much is known of the varieties Juniperus communis columnaris and Juniperus communis grayi. Hornibrook describes Juniperus communis columnaris as a narrow fastigiate form. Juniperus communis grayi,

since being granted plant patent 54, has not become popular with the nursery or landscape trade in the midwest.

The Polish juniper, Juniperus communis cracovia, is a broad upright plant with bluish-green leaves. While it is relatively dense when small, it is somewhat loose with age.

Another juniper that has found extensive sale in many nurseries is the Meyer juniper, Juniperus squamata meyeri. Its glaucous, bluish-white foliage is attractive. Young plants are quite compact and, because of their striking foliage, sell readily at roadside markets. The Meyer juniper, however, does not remain attractive long. Really good attractive plants of large size are hard to find. Old plants burn out badly in the center and often become destitute of foliage at the base. From observation and comments obtained from nurserymen, this plant apparently does somewhat better in the east, especially along the seacoast, where it is said to stand salt-water spray well. Its susceptibility to juniper webworm has already been mentioned.

Juniperus virginiana tripartita is placed on the discard list. It does not have many characteristics to commend its use and it is one of the varieties most susceptible to red spider.

HEADS UTAH ASSOCIATION.

Among the youngest of the organizations in this field is the Utah State Association of Nurserymen, now in its second year. With a membership small in numbers, its strength lies in the earnestness of the group, which has as its president a member of the foremost nursery and seed firm in the state.

J. J. Porter is a native of Utah, educated in the public schools and the University of Utah. At college he studied accounting and business administration. With F. W. Walton and associates, he organized the Porter-Walton Co. in March, 1905. This company has been a growing concern in more ways than one, as well as a distributor of seeds and nursery stock. The business has grown from a small beginning to one of sizable proportions, considering the areas served. The company does a catalogue business over the western states, from the Mississippi river to the coast. Sales yard, store and warehouses are situated in Salt Lake City; the nurseries and display grounds are at Centerville.

Mr. Porter has been active in civic and club affairs and is president of the Kiwanis Club in Salt Lake City. The Porter-Walton Co. is a member of the American Association of Nurserymen and the American Seed Trade Association.

PLANTS SELL GASOLINE.

Maybe the plants sell the gasoline, or maybe it is the other way around, but at any rate they work handily together at the Wheeling Nurseries, Wheeling, Ill., a few miles out on much-traveled Milwaukee avenue, northwest of Chicago. So much so that from May 29 to June 3 was held a grand opening of the enlarged Standard gas station at the entrance of the nurseries. Six pumps were added to the original three, to take care of the many motorists who have made this a regular stopping place.

The Wheeling Nurseries have been operated successfully for some years as a source of specimen stock, and the sixty-five acres contain material of such quality and condition as will arouse the admiration of any nurseryman. Ernest Kruse, the proprietor, is president of the Illinois State Nurserymen's Association. Like his fellows, he found income shrinking uncomfortably in the depression. A gas station on the busy thoroughfare was tentatively opened and nearly closed. The methods employed by competitors—in the filling station business—to close it aroused Ernest Kruse's ire. So he began offering a rosebush with five gallons of gasoline. Then customers asked about other items. Today customers save their coupons, or sales tickets, and everything in the nursery, says the proprietor, has its price in gasoline—anywhere from five gallons up to 500. The other day there came in by mail this letter:

J. J. Porter.

Dear Bill, Wheeling Nurseries. Have two 6-foot Norway spruces ready for me Saturday evening. I have coupons for 150 gallons. I'll pay you the difference and you can credit me when I buy gas from you during the summer.

Ernest Kruse will tell you he just sells gasoline now, and throws in the nursery stock. But there are many fine orders and landscape jobs that he gets on the north shore that are not paid in gas tickets.

GARDENS HELP RED CROSS.

In spite of dull, cold weather, about 500 visitors saw the private gardens of Lambertus C. Bobbink, May 26, when they were opened to help the Red Cross raise funds for relief of war sufferers.

The time was chosen by Mr. Bobbink and his daughter, Mrs. George C. White, who coöperated with the East Rutherford chapter of the American Red Cross in this means of raising funds, because most of the azaleas and a large number of hybrid rhododendrons were in bloom at the time. Mr. Bobbink's gardens at his home, on Herrick street, East Rutherford, N. J., adjoin the nurseries of Bobbink & Atkins, and visitors had the further privilege of looking over the blooming azaleas there.

In addition, dogwoods and lilacs in the garden were in bloom, along with many other shrubs and perennials.

TREES IN NEW YORK CITY.

Many trees have been planted on New York streets in the six years' beautification program of Park Commissioner Robert Moses, and there are now 980,000 trees on the 5,521 miles of the city's streets. The eight big elms planted in front of Rockefeller Center have led to the donation of a corresponding number of trees to be planted across the way in front of St. Patrick's cathedral. After the Sixth avenue elevated was torn down, the association of property owners on the street initiated a movement for tree planting along the thoroughfare. The park department now has a division of trees to advise homeowners on planting and to do the maintenance.

Excerpts from a Plantsman's Notebook

Further Notes on the Culture, Propagation and Uses of Many Kinds of Plants Given Garden Trial in Years Past—By C. W. Wood

Thrifts.

(May 20, 1940.) It is interesting to note, as one travels around the country, how nurserymen's show gardens influence the use of plants in their different communities. For instance, if the nurseryman uses his plants in groups, the observant gardeners of that vicinity will follow the good example; if he plants them singly, most gardens within the range of his influence will have the much-abused bonbon effect. There are plants and plants, of course, some being especially fitted for specimens, while others are seldom happily placed if used singly. The thrifts are example of the latter. They are among the most useful of plants when used in masses or as edgings, but single specimens are seldom effective.

One of the loveliest garden pictures that I know is in the show place of a commercial establishment, where the owner has used the sea-side thrift in its variety Laucheana (Armeria maritima Laucheana) to clothe a dry sunny bank. There are perhaps fifty plants of it on the slope, and it is a beautiful sight when they are in flower. Another lovely picture that comes to mind is a mass planting of close to 100 Armeria Giant Hybrids, against a background of gas plant foliage in the cutting garden of a friend. The need for mass plantings to get the best effects from thrifts is one reason why the plants are so useful in the nurseryman's scheme.

This is not the time to go into details regarding the long list of species recognized by botanists. Few of them are available, anyway, and the few that are can seldom be depended upon to come true from seeds. If you are interested in the genus and get near Ithaca, N. Y., in your travels it will pay you to visit the grounds of the Bailey Hortorium and look over the monographic study that is being made of the genus. The purpose of these notes would not be complete, however, without mention of a few kinds which should be in the hands of every neighborhood nurseryman.

My own experience tells me that the giant-flowered hybrids generally sold as A. formosa large-flowered hybrids are the most generally useful in the small nursery. Their wide range of colors and long wiry stems, up to eighteen inches in height, fit them for many roles. If one has calls for separate colors, it is easy to work up stocks of the wanted shades by means of cuttings. Or there are several named forms—Bees' Ruby, ruby-red, and Glory of Holland, bright pink, for instance—with which one can make a start. Yet, in catering to the demand for the tall-growing kinds, one should not overlook the need for the dwarf A. maritima, its named forms and hybrids. Of these, variety Laucheana, with bright rose heads, is most popular, being one of our best edging plants. The newer Vindictive, crimson, is also a useful plant and, being new, should be especially attractive to amateurs.

Oswego Tea.

(May 25, 1940.) Monarda didyma seems to have been loved by gardeners since their introduction to it. Just when that happy event occurred is not apparent, for the happenings in colonial gardening were not religiously recorded. Since its introduction to English gardeners "before 1752 by Peter Collinson, Esquire," according to Aiton's Hortus Kewensis, it has steadily risen in favor, and the introduction of new shades will likely keep it in the public eye. The original plant, a bright red, is still useful, not only because of its showy color, but also for its blooming period in July and August — two difficult months in the garden. It is also valuable because it grows and blooms profusely at that time in shade, and gardeners find shady places hard to deal with at any season. Its desire for more moisture than the dry soil of many gardens can supply it is its only handicap to even greater popularity, but that factor may be largely controlled by giving the plant a humus-filled, preferably leaf mold, soil in part shade.

In addition to the original bright red, variety alba, a pure white, has long been in gardens. It is less appealing to me, and evidently to others too, for most customers pass it by for the more showy ones. Other reds include the popular Cambridge Scarlet, which is described by the name, and Perry's Variety, a brilliant amaranth-red. But the most attractive color yet evolved, in my estimation, is Salmon Queen. Its color is truly delightful—a clear salmon-pink with none of the muddiness often covered by that descriptive term. I find it less tolerant of drought than the red-flowered kinds.

These monardas are root-spreaders and therefore need frequent division to keep the plants at their best. One often sees old clumps in commercial show gardens—depauperated specimens that have exhausted soil fertility and died in the center, making a poor advertisement for the plant and for the grower. On the other hand, dividing every third year and resetting in soil that has been built up with humus will show the plant at its best. That work will also supply stock for propagating purposes.

Commelina Sikkimensis.

(September 7, 1937.) Of the large genus commelina (the books tell us there are 100 or more species) none that I have grown is hardy here in northern Michigan, except, of course, our native C. communis, C. erecta, C. hirtella and C. virginica, and they are scarcely sufficiently decorative to catch the eye of the buying public. The name that heads these notes represents a plant which came to me in seeds last year as a good summer-blooming plant for the rock garden. As was to be expected, it proved too delicate for our cold winters, but otherwise was a worthy garden plant, being useful as an annual, when it produced its large gentian-blue flowers from late July until frost. In the south and in California it would no doubt live up to its perennial reputation and should then give an even longer flowering period. That, combined with its excellent color, would surely make it popular with amateurs, especially rock gardeners. It is true, as of so many of its relatives, includ-

ing the tradescantias, that its flowers only last until noon or shortly after that, but new ones are ready to open the following morning, and the performance is continuous after it starts.

Primula Rosea.

(May 26, 1940.) Several inquiries lately about Primula rosea grandiflora prompt me to say a few words about that splendid plant. First of all, I should say that I have to admit that I cannot grow it in my dry garden without more work than I care to give a plant after its nature has been studied. It, in common with all others of the auriculatæ section of primula with which I am acquainted, is a real moisture lover and will not do a thing unless it has water in abundance. The best planting of it that I have ever seen—or more correctly speaking, it was made of the variety grandiflora, which is merely a larger-flowered, longer-stemmed form—grew on a stream bank not over ten inches from water level, where its feet were constantly bathed in the cool water. The gardener was also trying to grow it on a level space ten feet above the stream, but even with the rich soil that it loves and with the help of the hose, one could see that it was not happy. If you, then, have really moist soil, which is well drained at the same time, or have customers with similar situations, you can get P. rosea grandiflora, knowing that you are getting one of the best dozen hardy primroses.

Although the Cyclopedia of Horticulture allows the plant specific rank under the name of rosea, most European students of the genus deny it that right, claiming that the name covers a number of closely allied Himalayan species. Be that as it may, it is true that we have at least two kinds in this country—the type, which makes a tuft of small glossy leaves, which in turn support 4-inch stems bearing loose heads of rose-red flowers with notched petals, and the variety grandiflora, which is similar except that the flowers are larger and the scape has become elongated to eight inches.

Primula Involucrata.

(May 26, 1940.) Speaking of Primula rosea in the foregoing paragraph reminded me of another of the auriculatæ section, P. involucrata, which I like even better than the former, though I cannot enjoy it because of the same reasons which deny me the other. I suspect, too, that it is a little less hardy; yet I cannot be sure on that point because of limited experience with either except under pot culture. For the benefit of the primula enthusiast I have extracted the following from some notes of 1932. This plant makes tiny tufts of glossy green leaves from which spring 8-inch stems bearing fragrant white flowers in June. A matter-of-fact description, such as the foregoing, does not tell half the glory of this lovely little primrose; nor shall I embellish it with catch phrases in the attempt to do so, leaving the plant to speak for itself. Gardeners of my acquaintance who can grow it in the open consider it one of the best primroses for the amateur, provided its cultural needs can be supplied. These include, so they tell me, a rich, moist soil and, in the climate of eastern United States, about half shade.

Centaurium.

(September 28, 1935.) A plant new in bloom in the garden (centaurium of some and erythræa of others) is one of the glories of the autumn. There is so much confusion in the naming of this group of gentian cousins that I make no pretense of keeping up with the whims of the moment, using the name under which they came to me. In this case the label reads "Erythræa centaurium" and represents a biennial. The first year from seed it makes a tuft of leaves which remind one of Gentiana acaulis. These disappear as the slender flowering stems emerge and elongate to a height of ten or twelve inches. And then during autumn these thin stems burst forth at their tops and in the axils of the upper leaves with compact clusters of showy pink flowers. The plant is easily satisfied in soil of slight acidity in full sun and, although biennial, is worth growing because of its late flowering period alone. It has self-sown here, indicating a readiness to be friendly.

Anemone Occidentalis.

(April 18, 1932.) The task of collecting native anemones was at one period of my garden life a most enjoyable adventure. The part of the task that made a real adventure of it was that most American kinds were hard to find. That was several years ago, but the same conditions still exist (and they still do in 1940), and the whole thing would be just as much of an adventure now as it was then.

One of the greatest joys of that adventure was when I found A. occidentalis, one of the loveliest of all windflowers. This much-named and much-confused plant comes from the high mountains of the northwest, but unlike so many alpines, it is not finicky in the east if given a leaf moldy soil in part shade and one that does not suffer for moisture during its growing period. It is said to benefit by the application of a little lime in its diet; I suspect that is correct, for my soil is naturally alkaline and it does well here. I have never been able to tell where A. occidentalis leaves off and A. Pulsatilla occidentalis begins and it would perhaps be of little interest to readers if I could. The plant has also been confused with A. alpina of Europe. The thing one wants, if I am any judge, is a cluster of finely cut, silky leaves (a beautiful ornament in themselves), among which set big, round-petaled, snow-white windflowers, on short stems at first, but elongating with age and reaching a height of eight or ten inches when the round clusters of silvery fluff indicate a harvest of seeds. The plant is beautiful over a long period, including that of flowering, seed-making and afterward. It is easily grown from fall-sown seeds and no doubt from root cuttings after the manner of A. Pulsatilla.

LEAF SCORCH.

Leaf scorch is developing here and there under conditions which suggest probable greater prevalence in the near future, reports E. Porter Felt, of the Bartlett Tree Research Laboratories, Stamford, Conn.

The early cases of leaf scorch appear on trees weakened from one cause or another. The recent rainy weather has been favorable to a luxuriant growth of soft tissues, and subsequent hot drying weather is most favorable to rapid evaporation. The tender leaves part with their moisture readily, and the indications are that in many cases the root systems were unable to meet the demands of the foliage. The result is first a wilting and then a marginal drying, and this may be followed by drying areas here and there in the leaf itself. A heavy leaf fall is another effect of these unusual weather conditions.

Most of the trouble at present is

physiological, although fungus may be involved and in some cases is the primary cause. Where the latter is true, spraying with a Bordeaux mixture will protect unharmed tissues and aid in checking the trouble. This is of little value if the leaf scorch is due largely to physiological conditions. Then it is a question of restoring the balance between root capacity and leaf demands.

The weak trees, those which are not in a thriving condition either because they are in unfavorable locations or have been recently transplanted, are more commonly victims of leaf scorch. They should be fed and in extreme cases invigorated in order to increase root action quickly and in this way bring about a restoration between leaf demands and root capacities.

TILIA CORDATA.

Tilia cordata, the little-leaf European linden, is a small to medium-size tree of about forty-five to fifty feet in height. Occasionally trees are found as high as ninety to 100 feet at maturity, but this is not common. The plant is a native of Europe, where it has been used for a long time as a shade tree. In habit of growth it forms a dense, much-branched, rounded head. The leaves are relatively small, somewhat disk-shaped or rounded, about one inch to two and one-half inches long. They are cordate at the base, finely toothed, dark green, glossy above and grayish or glaucous beneath, with axillary tufts of hair.

The little-leaf European linden is often confused with Tilia vulgaris, the common linden. Possibly the best identification point is the grayish-glaucous undersurface of the leaves on Tilia cordata and the glabrous green color of the leaves on the underside of Tilia vulgaris.

The flowers of Tilia cordata are yellowish-white, fragrant and produced in clusters of five to seven in late June or early July. The fruit is the characteristic winged seed of the linden and is quite attractive as long as it remains attached to the tree.

The cultural requirements of this plant are not specific, although it does best in a good, rich, well drained soil. It is probably not so exacting in its requirements as the American linden, Tilia americana. It does well in sun or shade.

There are a number of pests which trouble the linden; namely, red spider, cankerworm, Japanese beetle and stem borer. There is also one serious leaf disease, known as the leaf blotch. The insects can be controlled by the usual recommendations for these pests and the leaf blotch by three or four applications of Bordeaux mixture at intervals of two weeks. It is usually true that none of these pests is so troublesome on the little-leaf European linden as on the American linden.

Propagation of Tilia cordata is usually by seeds. It is advisable to clean the seeds and store them where dry until the stratification period. At that time it is advisable to stratify the seeds in moist sand and peat at a temperature of about 68 degrees for 120 days, followed by 100 to 150 days at 40 degrees temperature. The seeds of linden seem to vary considerably in their ease of germination; consequently, the storage period at the cold temperature of 40 degrees must necessarily vary to bring the seeds out of the resting condition. It would be advisable for nurserymen to watch the seeds rather closely after about ninety days' storage to be sure the seeds do not germinate in the containers used for stratification.

The little-leaf European linden is used mainly as a lawn and street tree. As a street tree it is best used in outlying city districts where it is not susceptible to heavy smoke injury. In addition to its use as a lawn tree, it is used for topiary planting. L. C. C.

TOWSON GARDENS.

When display gardens as a means of engaging public interest are discussed, among the first that come up for mention are the grounds of Towson Nurseries, Inc., Towson, Md. For twenty years these have been in process of development, one section being added to another, until today the residents of Baltimore and garden enthusiasts from a distance visit these show grounds, some for the spectacle of bloom in spring and others to study the large variety of trees, shrubs and perennials that there show their adaptability to local growing conditions.

Portion of Display Gardens in Spring Bloom at Towson Nurseries.

Some idea of the effect of landscape design and of the abundance of bloom may be gained from the accompanying illustration. In the section of the gardens pictured, tall junipers and graceful yews make a charming setting for the formal beds of tulips and rich setting of azaleas in the Kurume varieties. Flowering crabs, dogwoods and Judas trees are interspersed in the arrangement. Herbaceous perennials also are used to advantage. In the background is a circular garden of tulips, azaleas and rhododendrons. To the right is a rock garden with an inviting rivulet flowing over the rocks. To the left is a low stone wall with a top planting of rock garden flowers.

In design and in plant materials these display gardens have won much admiration and commendation.

AMERICAN ASSOCIATION OF NURSERYMEN

RICHARD P. WHITE, EXECUTIVE SECRETARY

636 SOUTHERN BLDG., WASHINGTON, D. C.

WEST POINT TRIP.

The committee on arrangements for the convention of the American Association of Nurserymen at New York City in July reports that a landing permit has been obtained, so that those who take the boat trip up the Hudson river July 24 will witness the famous parade of the cadets at 5:30 p. m. This is a stirring sight and in itself should make memorable the day's outing.

In addition there will be the opportunity to inspect the grounds of the United States Military Academy, which has many things of interest besides its importance as an army training school. The administration building, for instance, is one of the tallest all-masonry buildings in the world. The cadet chapel, completed in 1911, is considered an outstanding example of modern Gothic architecture; it contains one of the most complete church organs in the country, as well as many exceptionally beautiful stained glass windows. The old cadet chapel, built originally on a site near the library, was removed stone by stone in 1911 and rebuilt exactly in its original form in the cemetery. The Catholic chapel, completed in 1900, is of Norman Gothic style, almost an exact replica of a Catholic church in England erected by the Carthusian monks.

The library contains approximately 108,000 volumes, with an extensive collection of maps, manuscripts and rare books. The museum, located in the administration building, contains a collection of models of many different types of artillery materiel used by the United States army in all wars from the Revolution to the World war, specimens of all types of projectiles, an interesting collection of machine guns and automatic weapons, a small arms gallery, collections of Revolutionary and Indian relics, battle flags carried by United States forces in all wars and other equally interesting displays.

On the grounds are noted monuments, such as the equestrian statue of George Washington, whose efforts procured authority for the military academy; the battle monument, erected to memory of members of the regular army who were killed in action in the Civil war; the Sedgwick statue, in memory of General Sedgwick, killed in the Civil war, cast from cannon of the Sixth corps, which he commanded; the Thayer monument, in honor of Sylvanus Thayer, superintendent o he academy from 1817 to 1833 and considered the "Father of West Point"; the French monument, a statue of a French cadet presented in 1919 by L'Ecole Polytechnique; the Dade monument, in memory of Major Dade and his command, who were massacred in Florida in 1835 by the Seminole Indians; the Kosciuszko monument, in memory of General Kosciuszko, outstanding Polish hero of the American Revolution, who planned many of the defenses of West Point for that period.

APPROPRIATIONS BILL.

The agricultural appropriations bill is still in conference between the two houses of Congress, reports R. P. White, A. A. N. executive secretary. Amendments introduced in the Senate by Senator Gurney, authorizing the various agencies in the Department of Agriculture to contract for nursery stock deliveries three years in advance, have been accepted by the House. Starting July 1, 1940, the agencies will be able to contract with commercial nurserymen for the production of soil-erosion and reforestation stock. The Clarke-McNary money allocated by the federal forest service to coöperating states for the production or procurement of nursery stock also can be used in this manner. The amendments have no effect on strictly state appropriations for the support of state nurseries.

Funds for the support of investigations of methyl bromide, as a fumigant for nursery stock, are likewise assured. During the present fiscal year $5,000 has been expended for the purpose. During the coming fiscal year at least $10,000 must be spent for methyl bromide investigations, placing this work back on the same basis as during the fiscal year 1939.

For the control and prevention of spread of the Japanese beetle $395,000 (the same as the current appropriation) has been agreed on by both Senate and House. The third deficiency appropriations bill, recently transmitted from the budget bureau of Congress, carried another $30,000 for this item.

The Senate put $600,000 into the bill for white-fringed beetle control. This was not agreed to by the House and is still in disagreement. A group of beekeepers in Louisiana (who get $7.50 per hive from the state for all hives killed due to the white-fringed beetle eradication program) objected by wire and mail to certain conferees. They have been roundly upbraided by the agricultural authorities of their own state.

LANDSCAPE EMPLOYEES.

After numerous conferences during the past six months with the rules and regulations division of the bureau of internal revenue, the social security board legal staff and Senator Pat Harrison, chairman of the Senate finance committee, the contention of the A. A. N. that employees of nurserymen doing landscape work are included in the present definition of agriculture and therefore excluded from the provisions of the law has reached its final stages before the social security board. A 22-page brief, with numerous exhibits attached in support of the contention, was submitted to the legal staff of the social security board May 28. At least six weeks will probably elapse before a decision is reached, possibly longer, reports R. P. White, A. A. N. executive secretary.

DR. AUCHTER'S ASSISTANT.

Dr. E. C. Auchter, chief of the bureau of plant industry, June 1 announced the appointment of Dr. O. C. Magistad as assistant chief of the bureau. Doctor Magistad has been in charge of the United States regional salinity laboratory at Riverside, Cal., since 1938 and will give special attention to the soils investigations of the bureau. He will be succeeded by Dr. R. H. Walker, dean of the college of agriculture and director of the Utah agricultural experiment station, at Logan.

Doctor Magistad has had wide experience in soils investigations in the

All Nurserymen Are Cordially Invited to Attend the

65th Annual Convention American Association of Nurserymen

Hotel Pennsylvania — July 21-26, 1940 — New York City

Hear what your trade association is doing for you.
Enter into discussions of problems vital to your business.
Help determine future activities and policies of the A. A. N.
Meet your fellow nurserymen from Coast to Coast.
See West Point and the World's Fair.

COMPLETE YOUR FALL INVENTORY AND ORDER YOUR FALL SUPPLIES FROM OUR EXHIBITORS!

Bay State Nurseries, Inc.
The Doughten Seed Co.
Henry A. Naldrett
The Dow Chemical Co.
LaBars' Rhododendron Nursery
American Agricultural Chem. Co.
J. Shore & Co.
A. M. Leonard & Son
R. Lacy Nursery
John Bean Mfg. Co.
Merck & Co., Inc.
National Bundle Tyer Co.
Metropolitan Greenhouse Mfg. Corp.
American Chemical Paint Co.
F. H. Woodruff & Sons, Inc.
New Amsterdam Import & Supply Co.
Bagatelle Nursery
Lester C. Lovett
Jackson & Perkins Co.
Gardner's Nurseries
Rototiller, Inc.

A few exhibit spaces are still available. Write to the American Association of Nurserymen, 636 Southern Bldg., Washington, D. C.

United States, Central America and the Hawaiian islands. He received his undergraduate and graduate training in soils at the University of Wisconsin and holds a Ph.D. degree from that institution.

Dr. Walker is a graduate of Brigham Young University and holds a Ph.D. degree from Iowa State College. He was a member of the soils department for several years at the Iowa State College and later was conservationist at the Intermountain forest and range experiment station of the United States Forest Service. Since 1938 Dr. Walker has been director of the Utah agricultural experiment station and more recently has also been dean of the college of agriculture at Logan.

Dr. Auchter announced June 8 that Dr. Oswald Schreiner will act as adviser on soil problems connected with the bureau's work. Dr. Schreiner entered the bureau of soils of the Department of Agriculture in 1903. There he began studies on soil organic compounds and the effects of certain of these on plants. In 1906 he was placed in charge of soil fertility investigations in the department. He was recipient of the Ebert prize in 1900, the Longstreth medal of the Franklin Institute in 1912 and president of the Association of Agricultural Chemists in 1928.

MODIFY JAP BEETLE RULE.

All restrictions have been removed under the Japanese beetle quarantine regulations on the interstate movement of fruits and vegetables, except by refrigerator car and motor truck loaded in the areas of heavy beetle flight, according to the United States Department of Agriculture.

Much of the highway station inspection will be discontinued, temporarily at least, on passenger vehicles that may be carrying fruits and vegetables in small lots.

Certification of freedom from beetles will continue to be required on all refrigerator car and motor truck shipments of fruits and vegetables moving out from the areas of heavy beetle flight.

The federal department stated that it was possible to remove the inspection restrictions from areas under Japanese beetle quarantine regulations where flight was not heavy, because the chances of spreading an infestation from small, noncommercial shipments seemed remote at this time.

However, the authority is reserved to inspect at any point any shipment or vehicle that might spread the beetle from infested to non-infested territory.

WHITE-FRINGED BEETLE.

In the fifth revision of B. E. P. Q. 485, issued May 24, white-fringed beetle certification requirements are removed until February 1, 1941, for specified articles consigned from designated portions of the regulated areas.

Included in the list of articles are nursery stock and other plants which are free from soil when moved interstate from the regulated parts of Mobile county, Ala.; Escambia county, Fla.; East Baton Rouge parish, La., and Jackson, Hinds and Pearl River counties, Miss.

While the requirements are waived for some of the articles, nursery stock is not included, in movement interstate from the parishes of Saint Bernard and Orleans, including the city of New Orleans, and from regulated parts of the parishes of Jefferson and Plaquemines, La.

This Business of Ours

Reflections on the Progress and Problems of the Nurseryman—By Ernest Hemming

SUMMER PLANTING.

Last winter in the reports of certain midwestern nurserymen's short courses there were statements that more attention should be paid to the possibilities of planting jobs in summer. If it were possible to extend our planting season through the summer, it certainly would enable us to keep the key men of our organizations profitably employed and make it possible to show a better annual profit.

The first obstacle seems to be that, while the idea is generally practical, there is no correlation of the known facts about methods of summer planting. Wherever there has been any experimental work, it has been done without any collective effort and only on certain phases. The best method of overcoming this obstacle would be for all who have tried various phases of summer planting to write their results to the trade paper. Then experimentation on the unknown phases could be carried forward.

The next obstacles are yourself and your customer. Many will say immediately on reading this article that it is all bunk and that it can't be done. The answer to that is it is being done, and successfully, too. But if the inertia among the nurserymen is great, the inertia among customers will be tremendous. There collective action will be mandatory, and when we do begin to educate the public to the idea, we want to be prepared to succeed.

Why don't we plant in summer? It is because in the old days transportation facilities were such that we were limited to handling plants only when they were dormant. Yet all of us transplant all sorts of small, actively growing stock into nursery beds, where they are shaded and watered, and the plants establish themselves in a few days.

Why, with modern equipment and rapid handling, can't we do planting jobs in summer? Perhaps, with practice, we shall find that plant activity will be to our advantage and that the stock will establish itself in a much shorter time. My father always has had the theory that there was a definite rhythm in plant growth; i.e., that root and shoot growth alternated. He often proved it to me, at least with potted plants. Is there any reason why we couldn't take advantage of that rhythm to plant at the end of a shoot-making growth. Of course, plants vary in this respect, from such as the Japanese maple, which makes all its shoot growth for a year in three or four days, to others like American holly and the pin oak, which with us make two and three shoot growths, and to still others like wisteria, which seems to grow all summer.

Here on the eastern shore of Maryland, where the summers are hot and the growing season is rather long, we have done some summer planting, perhaps a bit timidly because the customer reaction might be severe to a failure. However, all that we have done has succeeded, and has included shrubs, shade trees and evergreens. A few, the notoriously difficult plants like tulip poplars, magnolias, etc., have been avoided.

We have not used any new processes in our transplanting, either. After preparing the ground we usually try to pick moist weather, or after a rain, to plant. The plants are dug with adequate balls and handled in the trucks so that the wind doesn't whip them to pieces; they are really just treated as living plants and not dried sticks. The plants are set as quickly as possible and are thoroughly watered, both roots and foliage, regardless of the position of the sun. Plants are shaded if deemed necessary, sometimes only by leaving the tops tied up with twine, which merely cuts down evaporation, or with structures if the plant is a valuable one. Tree trunks are wrapped to shade the bark. When the job is completed, the necessity of subsequent waterings is impressed on the customer. Since we have only planted in the summer when customers wished it, that phase offered no pitfall. In Florida, where they plant all year around, landscape organizations have maintenance men that continue the watering until the planting is established and perhaps in subsequent dry seasons.

We have not yet tried Dowax or any similar preparations. Some, I understand, have found them to be quite practical; perhaps they will report their results in the American Nurseryman.

Of course, there is the wonderland of vitamin B_1 and the root growth-promoting substances; whether they are needed if we plant in rich topsoil I don't know. Much work is being done in that field; so you will hear more from the various experiment stations as time goes on.

Some might ask if the extra care in handling the plants wouldn't make the work unprofitable. The work might be less profitable, but ask an accountant what difference it would make to your final profit and loss statement if the months of June, July and August could be made to break even. Then the lack of planting season rush and strain would make the extra care needed no burden.

All of us plant in the late spring to wind up our orders, when all too

DOW METHYL BROMIDE

PROTECTION against PESTS

The modern scientific method to control Japanese beetle and other pests. High toxicity to insects in all states of development—High penetrating power.

THE DOW CHEMICAL COMPANY
Midland Michigan

TRADE DOW MARK

The proof is in the testing....
USE
NURSERYMAN'S TAPE
Helps reduce knots and malformations among piece-root grafts.
Send for sample and prices
INDUSTRIAL TAPE CORPORATION
NEW BRUNSWICK, N. J.

often the plants have made much soft growth. Frankly, I would much rather move the plants after they have hardened up a bit in midsummer.

E. S. H.

THE WOMEN'S INFLUENCE.

It would be interesting to know what proportion of ornamental nursery stock is disposed of through the strictly professional landscape architect as compared with that sold by the nurseryman direct, through catalogues, nursery and landscape salesmen. We are inclined to think the proportion is much in favor of the latter.

Perhaps the depression since 1929 has had much to do with this, but there is another influence affecting the employment of strictly professional landscape architects, except on the larger jobs. That is the women, through the garden clubs, garden tours and their taking up landscape gardening as a profession. It is a wise nurseryman who plans his selling and advertising campaign with due regard to this change that is taking place. The women are getting educated and are becoming quite capable, and judging by what they are accomplishing, they will control, or at least greatly influence, the choice and consumption of the nurseryman's products in the future.

Ernest Hemming.

C. C. C. TREE PLANTING.

More than 2,000,000,000 trees will have been planted by the Civilian Conservation Corps when enrollees complete their 1940 program, according to James J. McEntee, director.

The 1940 program includes the planting of 200,000,000 trees to reforest public lands and 100,000,000 seedlings and young trees on erosion-control projects, he said. Most of the C. C. C.'s reforestation plantings are planned and supervised by the Forestry Service, while the Soil Conservation Service supervises plantings on erosion-control projects. Interior department agencies supervise planting in other areas.

About 1,800,000,000 trees already have been planted. Michigan led with 419,000,000 trees, followed by Wisconsin with 328,000,000. Other high states were: New York, 171,000,000; Louisiana, 152,000,000; Mississippi, 110,500,000, and Minnesota, 93,000,000.

Give Your Business a Boost

Get a KEMP Power Soil Shredder and watch your costs of preparing compost drop 50% to 75%! Notice the quality of your plants improve with properly shredded compost.

With this machine you can shred and mix any kind of soil, sod, compost, manure, peat, etc.—to any desired texture—for any purpose. You'll be surprised how little a KEMP costs. You can pay for it right out of the savings it brings.

Ask us to send you all the facts. Write KEMP MANUFACTURING CO., Dept. AN-260, 1919 Peach St., Erie, Pa.

No. 1 Electric Model
Kemp Soil Shredders are made in sizes for small or large growers. Gas or electric motor. Capacity from 2 to 16 cu. yds. per hour.

KEMP POWER SOIL SHREDDERS

CAMELLIA ANNIVERSARY.

Just 200 years ago a Jesuit missionary, an Austrian by birth, introduced into Europe a new flower known in Japan as San-sa-Tsubaki. This name was too difficult of pronunciation for Europeans; so the flower was named camellia, after that of its introducer, Father Camelli. The plants he brought were obtained in the Philippine islands, and they attracted considerable attention for their foliage and flowers.

On arrival, Father Camelli went first to the royal palace at Madrid, where he offered one to the queen, Maria-Theresa, the wife of Ferdinand VI, who broke off one flower to give to her husband, then at the point of death. The priest bestowed the second on the royal family of The Two Sicilies and, cultivated with care in the open, in the garden of the royal palace at Caserta, it eventually grew to a height of thirty feet and provided cuttings for propagation in many parts of Europe. The third specimen brought by Camelli had also a royal destination, the court of Saxony, and was likewise planted in the open, with many precautions, in the royal park at Pillnitz, near Dresden, where it is said still to thrive in a structure that provides winter protection.

Since the middle of the eighteenth century, the camellia has been freely cultivated in England, France and Italy, but for some time it was considered to be a stove plant; little by little it was freed from its coddling treatment and was found to be quite hardy, at least in temperate climates.

TEN per cent increase in business this season is reported by J. Frank Sneed, owner of the Sneed Nursery Co., Oklahoma City, Okla., and prospects are extra good for next season.

Diseases of Trees

Latest Findings on Various Infections of Trade Importance Reported in Recent Research Studies — By Leo R. Tehon

THE PLANE-TREE DISEASE.

The fragmentary information regarding the plane-tree disease, previously available only upon consultation of a number of publications and notices, has been brought together by James M. Walter in an article in the April, 1940, number of American Forests, official magazine of the American Forestry Association.

The plane-tree disease, first brought to the attention of the federal division of forest pathology in 1933 by tree owners and officials of Philadelphia, has to date been responsible for the destruction of about 10,000 plane trees in and near Philadelphia and about 1,000 trees in Baltimore. Also, from one to fifty diseased trees are known to exist in certain other localities, namely Newark, N. J.; Alta Vista, Va.; Claymont, Del.; Washington, D. C.; Williamsburg, Va.; Magnolia, N. C.; Vicksburg, Miss., and South Charleston, W. Va. With but one exception, all of the known diseased trees are either street or shade trees.

The value of the trees destroyed by the disease is difficult to estimate. But, since it is estimated that to remove a dead tree and replace it with a new tree costs on an average $35, the plane-tree disease has already cost the cities in which it has occurred about $400,000.

At first the plane trees attacked by the disease were thought to be oriental planes, Platanus orientalis. More careful identification showed, however, that they were London planes, Platanus acerifolia. The London plane appears to have originated as a hybrid between the native American sycamore, Platanus occidentalis, and the oriental plane tree. Widely planted as a shade tree, it apparently hybridizes with the American sycamore and appears in a considerable variety of leaf and fruit forms. Both it and the American sycamore are susceptible to infection.

In the southwestern part of the United States, five other species of platanus are native, but nothing is known yet of their susceptibility to the disease, or of that of the true oriental plane, which is rarely planted.

Ordinarily the first symptoms of the plane-tree disease to be noticed are, in early summer, dwarfed and withered leaves and, in late summer, a yellowing, browning and dropping of leaves. Although commonly the first signs of infection to attract attention, these symptoms do not develop until infection has become well advanced in the trunk or branches. Consequently, when the leaf symptoms are present, it should be possible to find the elongated cankers produced by the disease on trunk or branches, or both, and to find a reddish-brown to bluish-black discoloration in the wood beneath the cankers.

The fungus which causes the plane-tree disease has been identified as a ceratostomella. Several native species of ceratostomella cause blue stain in wood. Also, the fungus which causes the Dutch elm disease is, in one of its stages, recognized as a ceratostomella. There are, thus, both native and introduced species of this kind of fungus. Whether the plane-tree fungus is native or has been introduced is not yet known.

The cankers on trunks and branches which result from the presence of infections in the wood beneath them are described by Mr. Walter as follows:

"On smooth bark areas the first external symptom is a dark brown or black discoloration, usually elongate, in line with the grain of the underlying wood. On bark areas retaining older layers and scales, the first noticeable symptom is a long vertical depression beneath which the inner bark is blackened. These are initial stages of the cankers or lesions. Although during the first year of infection the cankers are commonly twenty to forty inches long and less than two inches wide, they may be indistinct and the early stages of infection may not attract attention. The cankers widen irregularly and separate cankers grow together, finally girdling the branch or trunk. Observations also suggest that a single infection usually requires three to five years to girdle a stem one foot in diameter.

"The dead bark darkens, dries, cracks and sloughs away. Large trees in advanced stages of infection commonly have considerable wood surface exposed in more or less distinct cankers. When weather conditions are suitable, especially during rainy periods during the summer, the organism forms abundant spores beneath recently killed bark and on freshly exposed wood surfaces."

Within the tree, the region parasitized by the fungus is characterized by its discoloration. This discoloration is darkest in the medullary rays and often shows most conspicuously in cross sections of trunks as wedge-shaped sectors.

After having gained entrance to a tree, the fungus appears to grow most rapidly in a radial direction, advancing through the wood toward the pith. Upon reaching that point, it grows outward radially in other directions, eventually causing discolora-

THE STORRS & HARRISON CO. ESTABLISHED 1851 TREES PLANTS SEEDS PAINESVILLE, OHIO TRADE MARK

The Storrs & Harrison Company

"PAINESVILLE NURSERIES"

86 Years in

Painesville, Ohio

MIDWEST HEADQUARTERS FOR COMPLETE NURSERY SUPPLY

Fruit Trees
Deciduous Trees
Evergreen Trees
Shrubs
Vines

Small Fruits
Roses
Hardy Perennials
Plants
Seeds, Bulbs, Tubers

MODERATE PRICES

RHODODENDRON HYBRIDS. Grafted, hardy varieties only.

AZALEA KAEMPFERI HYBRIDS. Named varieties, the hardiest of all Azaleas for landscape work.

KOSTER'S BLUE SPRUCE. Perfectly shaped; transplanted.

EUROPEAN BEECH, fine specimen. Also fastigiata, pendula, Riversii.

Ask for catalogue

BAGATELLE NURSERY

P. M. Koster, Mgr.

P. O. Huntington Station, L. I., N.Y.

TREES

We have a fine assortment of excellent trees for Landscape, Parks or Street Planting.

Pin Oaks, Red Oaks, Honey Locusts
Sugar Maples, Sweet Gums
European Lindens, Hemlocks and Pines

OUTPOST NURSERIES

Ridgefield, Conn.

EVERGREENS

A complete assortment

Young Thrifty

Well Grown
Transplanted

Write Us

JACKSON & PERKINS COMPANY

Newark, New York

NORTHERN COLLECTED EVERGREENS

Hardy, well rooted. Abies balsamea, Thuja occidentalis, Tsuga canadensis.
Priced per 1000. Cash.

2 to 6 ins...$5.00 9 to 12 ins...$12.00
6 to 9 ins... 9.00 12 to 18 ins... 20.00

Ferns, plants and native orchids.

WILLIAM CROSBY HORSFORD, Charlotte, Vt.

BURR'S QUALITY

BERBERIS THUNBERGII
(Japanese Barberry)

SEEDLINGS (1-yr.)	Per 1000	Per 10,000
9 to 12 ins.	$9.00	$70.00
6 to 9 ins.	7.00	50.00
3 to 6 ins.	5.00	35.00

Can ship now or when you say.

C. R. BURR & CO., INC., Manchester, Conn.

PRIVET and BERBERIS

Splendid Stock

Write for Special Quotations

LESTER C. LOVETT

MILFORD DELAWARE

tion of an entire section of the trunk or branch and producing secondary cankers in the bark at various points around the tree.

There is much evidence indicating that the plane-tree disease enters the tree through wounds. In the case of many of the diseased trees that have been examined, at least the oldest infections, sometimes the only infections, present are associated with wounds made when the lower branches were pruned. On streets planted solely to plane trees it has been observed, also, that on one side of the street through as much as a block all the trees would be diseased or dead, while on the opposite side all trees would be healthy.

Forty-five branch infections were examined closely in 1939 and it was found that twenty-six of them were associated with pruning cuts, eight with injuries made by climber's boots, three with accidental saw scratches, two with rope burns, one with a break due to wind and two with dead spurs. Only three of the forty-five infections showed no connection with a recognizable injury.

It has been proved experimentally that the disease can be readily transmitted by a pruning saw, if the saw is used first in a diseased tree and then in a healthy tree. Disinfection of the saw with denatured alcohol appears, however, to give protection.

Cases have been observed in which the oldest canker, or the only canker, on the tree was centered on a pruning wound that had been carefully protected by a wound dressing. The explanation advanced for this is that sawdust from infected trees can be carried by the brush into the dressing can and thus be applied to new wounds on healthy trees. Tests have shown that some commonly used asphaltum wound dressings permit the fungus to survive.

A well rounded program for the control of the plane-tree disease has not yet been formulated. However, the following three steps appear important: First, wherever diseased trees are found, they should promptly be removed and burned. Second, care should be taken to avoid unnecessary injury to plane trees, especially in districts where the disease is known to be present. Third, disinfection of saws and other tools used in pruning operations with denatured alcohol should be carefully practiced

Quercus robur fastigiata

Strong grafts from 2½-in. pots

Grafted on Quercus robur understock, grown a full year in pots before grafting.

$4.00 per 10, $35.00 per 100

HESS' NURSERIES

Mountain View New Jersey

BOBBINK & ATKINS

Nurserymen since 1898

Rutherford, New Jersey

Send for a copy of our 1940 Wholesale Catalogue.

Use printed stationery, please.

TAXUS

AZALEAS

RHODODENDRONS

ASK US ABOUT THEM

WYMAN'S

FRAMINGHAM NURSERIES

FRAMINGHAM MASSACHUSETTS

Let us know what you have to Sell
Also what you want to Buy
In **Nursery Stock** and **Supplies**
Thank "you all" for a very busy Spring Season

ARTHUR DUMMETT, Mt. Vernon, N. Y.

KOSTER COMPANY, INC.

PIERIS JAPONICA
6 to 8 ins., 1-yr., tpl., bed-grown $120.00 per 1000
8 to 10 ins., 2-yr., tpl. field-grown 280.00 per 1000
TAXUS HICKSII
8 to 10 ins., 1-yr., tpl., bed-grown 100.00 per 1000
10 to 12 ins., 2-yr., tpl., field-grown ..... 150.00 per 1000

BRIDGETON, N. J. *Write for catalogue.*

whenever plane trees or sycamores are pruned.

If trees are observed with symptoms indicating the presence of the plane-tree disease, fresh wood samples containing discolorations should be sent to the laboratory of the division of forest pathology, United States Department of Agriculture, 8 Whippany road, Morristown, N. J. There, the samples will be subjected to laboratory culturing, and the results obtained will be reported to the sender of the material. L. R. T.

HEMLOCK RUST CONTROL.

A rust which attacks the twigs, cones and leaves of eastern and Carolina hemlocks has caused considerable damage to nursery-grown trees in North Carolina. This rust is widely distributed throughout eastern United States and Canada, but it apparently only does damage where the hemlock foliage is dense and conducive to infection, such as in a nursery.

George E. Hepting and E. Richard Toole, of the United States Department of Agriculture, asserted that as high as eighty-two per cent of the shoots of hemlocks in localized nursery areas in North Carolina were killed by the rust in 1938. The amount of infection varied within the nurseries and between the nurseries, being higher in the nursery where growth was more crowded. The Carolina hemlock was found to be much more resistant to the rust than the eastern hemlock.

The source of infection is the telia of the rust that has wintered on the twigs and in the cones killed the preceding spring. The infection is characterized by a yellowing of some of the new leaves about one month after the buds burst in the spring. A week to ten days later the parts of the new shoots about the bases of some of the yellowed needles turn orange and later become flabby, often causing the shoots to droop. The infected needles will soon drop off. As the season progresses the affected shoots curl and lose all of their needles, giving the appearance of having been singed. These shoots usually remain on the trees for a year or two. Cones that have been infected remain closed and do not produce seeds.

Experiments in control showed that spraying with a Bordeaux mixture or lime-sulphur gave good results. The Bordeaux used was a 4-4-50 mixture, and the lime-sulphur spray was made up of four pounds of the powdered lime-sulphur and fifty gallons of water. Both of these sprays used two pounds of casein spreader.

The lime-sulphur spray appeared to be superior to the Bordeaux mixture. In addition to protecting the shoots, the spray also prevented the telia from producing sporidia. The recommended spraying is with lime-sulphur weekly through May; however, the period of infection will vary according to weather conditions and the locality. Until schedules can be worked out according to weather conditions and the locality, it is recommended that all hemlocks affected be sprayed with lime-sulphur at the time the buds burst and once a week for the following four weeks. All these recommendations must be qualified to meet local conditions.

SOUTHWESTERN NEWS.

Ernest Haysler and his son Kenneth staged their tenth annual rose show, which continued day and night for one week beginning June 9, at the Cloverset Flower Farm, Kansas City, Mo. The rose season begins for them after other nurserymen are through, because the bushes are sold in the Cloverset pots which Mr. Haysler developed. In addition to the roses, other seasonable items are offered, such as plants for porch boxes and bedding plants.

Hurst John has organized the Garden Guide of Missouri, with headquarters at 1008 Broadway, Columbia, Mo. He says, "It is primarily an advisory service organization, coordinating the different fields of landscaping, collecting data and establishing in the minds of Missouri people the importance of a continuity of care of the lawn and garden. In conjunction with the service we are planning a syndicated article as well as a training school for helpers, not to mention the possibilities of an arboretum and small nursery for supply stock."

There has been building activity among Kansas nurserymen this spring. Ralph Ricklefs, of the Kansas Landscape & Nursery Co., has moved into a new dwelling at Salina, while Will Griesa, of the Mount Hope Nurseries, Lawrence, is completing a new home on the site of the one which burned last February.

W. C. Salome, of the Mount Hope Nurseries, Mount Hope, Kan., who is soon to leave on his annual northern fishing trip, reports that this last season was the best he ever enjoyed.

Wayne McGill, of A. McGill & Son, Portland, Ore., recently completed his annual swing through the middle west, which takes him as far east as Chicago. He found everyone pleased with the spring business and optimistic about the future, while he himself was well pleased with sales. His father, on a similar trip to the east, reports like results. Wayne McGill expects to attend the A. A. N. convention in July.

G. B. Williams, secretary-treasurer of the Neosho Nurseries Co., Neosho, Mo., and Joseph Weston, son of the president of the same institution, were involved in an automobile accident late in May, caused by a drunken driver who collided with them. Mr. Williams suffered serious injuries, and a fractured right leg will keep him in the hospital from three to six months. Joseph Weston is now up and about, recovering from terrible cuts and bruises.

FOR DELIVERY
FALL 1940 — SPRING 1941
A LARGE, COMPLETE ASSORTMENT of CHOICE NURSERY STOCK
Fruit Trees, Fruit Tree Sdlgs., Small Fruits, Ornamental Trees, Shrubs and Evergreens, Western-grown Roses, Hardy Perennials, Many New Popular Specialties.
WE SOLICIT YOUR INQUIRIES
Price List Sent on Request.
"LAKE'S" Shenandoah Nurseries
Shenandoah, Iowa
"70th ANNIVERSARY"

WHOLESALE GROWERS
of BARBERRY THUNBERGII, Red and Green, 2 and 3-year-old transplanted, principally 12 to 15, 15 to 18, 18 to 24 inches and 2 to 3 feet grades. CALIFORNIA PRIVET. PEACH and APPLE trees in leading varieties. SOUR CHERRY trees. WASHINGTON RUSTPROOF ASPARAGUS 2-yr. General assortment and large supply of EVERGREENS, EVERGREEN SHRUBBERY and DECIDUOUS TREES including European Mountain Ash and SHRUBBERY. PERENNIALS and ROCK GARDEN PLANTS.
Trade List mailed on request.
Send us your want list.
Make your plans to visit our nurseries when you attend the Nurserymen's Convention.
THE WESTMINSTER NURSERIES
Since 1893 Westminster, Md.

1887 *1940*

WE OFFER FOR 1940

our usual line of

SHRUBS EVERGREENS
FOREST AND SHADE TREES
VINES AND CREEPERS
NATIVE PLANTS

Write for Trade List

FOREST NURSERY CO., INC.
J. R. Boyd, Pres. McMinnville, Tenn.

EVERGREENS

Fine assortment of the best types of B&B Evergreens.

HOLTON & HUNKEL CO.
Milwaukee, Wis.
Nursery at Brown Deer, Wis.

TAXUS CUSPIDATA
Spreading Yew

Improved dark green strain. Best Evergreens for sun or shade, foundation plantings and hedges.

2 to 8 feet

Send for special list.

THE W. A. NATORP CO.
Cincinnati, Ohio

HILL'S EVERGREENS
Complete assortment of lining-out sizes
Also larger grades for landscaping
Send for our wholesale catalogue
D. HILL NURSERY CO.
EVERGREEN SPECIALISTS
Largest Growers in America
Box 402 DUNDEE, ILLINOIS

EVERGREENS
Lining-out and Specimens
Fruits and Shrubs
Write for price list
J. V. BAILEY NURSERIES
Daytons Bluff Sta. St. Paul, Minn.

EVERGREENS
For Seventy-six Years
Growers of Quality Evergreens
Lining-out Stock a Specialty
Write for Trade List
EVERGREEN NURSERY CO.
Established 1864 : STURGEON BAY, WIS.

Wholesale growers of the best
Ornamental Evergreens,
Deciduous Trees,
Shrubs and Roses.
Write for our current trade list.
THE KALLAY BROTHERS CO.
Painesville, Ohio

THE BIGGEST TREE.

The big tree, Sequoia gigantea, called General Sherman, in Sequoia national park, California, is the biggest tree in the world by volume, and probably the oldest, according to the results of his personal study reported in the National Horticultural Magazine by A. D. Shamel, of the United States Department of Agriculture. His measurement of the circumference of the trunk last summer showed it to be, at five feet from the ground, eighty-four feet and nine inches with an average diameter at that point of twenty-six feet and eleven inches. Its height is given by the National Park Service as 272 feet and five inches.

Reports of a larger tree in southern Mexico led him to visit El Tule, as it is commonly known in Mexico, a Montezuma bald cypress, Taxodium mucronatum, located in the village of Santa Maria del Tule, a short distance southeast of the city of Oaxaca, in the state of Oaxaca, Mexico. His measurements showed the circumference at five feet from the ground to be 113 feet and four inches, the average diameter at that point being thirty-six feet and seven inches. Its height is 118 feet and seven inches, and the spread of the branches is more than 100 feet. While the Mexican tree is larger in circumference, the General Sherman tree is about two and one-quarter times as tall.

The age of the General Sherman tree is estimated as between 3,000 and 4,000 years. The age of El Tule has been variously estimated as from 4,000 to 10,000 years, but Mr. Shamel hazards a guess, based on the comparative size of El Tule with others of known age, that the tree is not more than 2,500 years old.

Rivals for the honor of being the largest tree have been mentioned from time to time, including specimens of the coast redwoods, eucalyptus trees in Australia, baobab trees in Africa, banyan trees in India and others, but the claims have failed of substantiation upon investigation. While some of the coast redwoods, Sequoia sempervirens, are taller than any of the big trees, Sequoia gigantea, and some of the baobab trees have trunks larger in circumference, they all fail, so far as available records show, to excel the General Sherman tree in volume, and probably in age.

CARLOAD LOTS

ELM, American, Moline and **Vase,** up to 4 ins. All transplants.
MAPLE, Norway, up to 3½ ins. Transplants, extra select, spaced 7x7 ft.
POPLAR, Lombardy, up to 2 ins.
WILLOWS, Thurlow, up to 3 ins.
BARBERRY, Thunbergii, up to 2 to 3 ft.
SPIRÆA, Vanhouttei, up to 5 to 6 ft.
APPLE, 2-year.
CHERRY, 1-year.
PEACH.

All of above items can be supplied in carload lots.

Send for list on many other items.

C. M. HOBBS & SONS, INC.
Bridgeport, Indiana
Largest Nursery in Indiana. Est. 1875

BERBERIS THUNBERGII
Write for carload prices
SPECIMEN EVERGREENS
Refer to our descriptive price list

See our page on back cover of March 15 issue

GARDNER'S NURSERIES
ROCKY HILL, CONN.

"A friendly, efficient sales service"
E. D. ROBINSON
SALES AGENT
38 So. Elm St. P. O. Box 285
WALLINGFORD, CONN.
Representing
Adams Nursery, Inc.
Bristol Nurseries, Inc.
Barnes Brothers Nursery Co., Inc.
North-Eastern Forestry Co., Inc.
A. N. Pierson, Inc.
A complete line of well grown hardy plant material
Evergreens and Lining-out Stock

PRINCETON NURSERIES
of PRINCETON, N. J.
SUPERIOR
Hardy Ornamentals

SEEDS
Tree and Shrub
Perennials
HERBST BROTHERS
92 Warren St. New York, N. Y.

Lining-out Evergreens
Good assortment of standard varieties.
Price list on request.
SCOTCH GROVE NURSERY
SCOTCH GROVE, IOWA

Coming Events

NORTH CAROLINA PROGRAM.

The annual summer meeting of the North Carolina Association of Nurserymen will be held at Hickory, N. C., June 26 to 28, with the Hotel Hickory as headquarters. Owen G. Wood and R. P. White, president and secretary of the A. A. N., will be present. The tentative program is as follows:

WEDNESDAY, JUNE 26, 7:30 P. M.

Registration, Hotel Hickory. Fee of $1.10 includes banquet ticket.

Meeting of executive, legislative, membership, code of ethics and other committees.

THURSDAY, JUNE 27, 9 A. M.

Meeting called to order, invocation, roll call, recognition of guests, appointments of convention committees and election of secretary pro tem.

Welcome to Hickory and Catawba county, by Walker Lyerly, mayor of Hickory.

Report of the president, S. D. Tankard, Jr., Hickory.

Address, by Prof. M. E. Gardner, Raleigh.

Greetings from the American Association of Nurserymen, by Dr. Richard P. White, secretary, Washington, D. C.

"The Landscape Architect and the Nurseryman," by C. H. Howard, landscape architect, Cleveland, O.

Report of committee on code of ethics, by Walter Campbell, Greensboro, chairman.

THURSDAY, JUNE 27, 2 P. M.

Tour of local gardens and points of interest, manufacturing establishments and the Howard-Hickory Nurseries.

Choice of boating and swimming at the Lakeside Pavilion or visiting the Sipe orchards.

THURSDAY, JUNE 27, 7:15 P. M.

Banquet, at the Hotel Hickory with music and entertainment; J. E. Coad, Hickory, after-dinner speaker.

"Coöperative Purchasing," by E. I. Tinga, Castle Hayne.

Meeting of proposed Carolinas chapter by members of the American Association of Nurserymen.

FRIDAY, JUNE 28, 8:30 A. M.

Report of secretary-treasurer, W. H. Howard, Hickory.

"Making Friends for Horticulture," by William Edingloh, New Bern.

"Promotion of the Fruit Tree Business," by J. Y. Killian, Newton.

"Dead Heads and Dead Beats," by J. Van Lindley, Greensboro.

Address, by C. H. Brannon, state entomologist, Raleigh.

Greetings from the Southern Nurserymen's Association, by W. C. Daniels, Charlotte.

Reports of committees, election of officers and selection of next meeting place.

OKLAHOMA SUMMER MEET.

Nurserymen from other states, as well as those in Oklahoma, are invited to attend the summer meeting of the Oklahoma State Nurserymen's Association, to be held at Durant, June 20 and 21. The program was printed in the June 1 issue. J. T. Foote and his associates of the Durant Nursery Co. will be hosts, and a barbecue will conclude the event.

FORM FLORIDA BODY.

At the annual meeting of the Florida State Florists' Association, held at the University of Florida, Gainesville, May 28, was organized the Florida Association of Nurserymen. It is believed the new organization, which continues to be a part of the F. S. F. A., will more effectively serve the interests of nurserymen in this state. Formerly they formed a group of the florists' association, with their own vice-president.

Officers elected for the coming year are: President, M. J. Soule, St. Petersburg; vice-president, George Taber, Glen Saint Mary; secretary, Dr. W. B. Shippy, Sanford, and treasurer, Carl F. Cowgill, Tampa. These officers, with M. J. Daetwyler, Orlando, will constitute the executive committee.

Guest speakers included John V. Watkins, assistant professor of horticulture, University of Florida, and Erdman West, mycologist, of the Florida agricultural experiment station. Professor Watkins discussed the subject of "Plant Growth Substances," summarizing accomplishments to date at the University of Florida and elsewhere on the treatment of plants with vitamins and root-inducing substances. While root-inducing substances, such as indolebutyric acid and naphthaleneacetic acid, have generally been found helpful in the rooting of cuttings, he pointed out that these chemical compounds are merely aids and not substitutes for skill in the handling of plant materials. The speaker stated that vitamin B_1 in dilute solutions benefits plants grown in soils deficient of organic matter, but no outstanding benefit has followed its application to plants grown in highly organic soils.

Mr. West described the azalea flower spot, a serious disease of the flowers which is rapidly coming to the attention of azalea growers. It was stated that the disease is already widely distributed in Florida and other southern states and that work on its control is proceeding at the Florida experiment station and at other points.

A FORMAL garden arranged by J. B. Watkins, Jr., of Watkins Nurseries, Midlothian, Va., was the feature of the Tuckahoe Garden Club flower show at Richmond recently.

THE nursery of Paul Bohem at Santa Maria, Cal., has been closed, and Mr. Bohem has rejoined the Inglewood Nursery, Inglewood, in charge of the landscaping department.

THE annual rose festival of the Hillsdale Nursery Co., Indianapolis, Ind., was held Sunday, June 9. The keen local interest in this event at the beautiful grounds maintained by Alex Tuschinsky was described in the illustrated article about this event a year ago in this magazine.

MEMBERS of the Nebraska Nurserymen's Association met at the Capital hotel, Lincoln, Neb., May 31, for a luncheon honoring State Forester Clayton Watkins, who is entering the nursery business at Fort Collins, Colo. After the luncheon a business meeting was held, with the president, Charles Andrews, Arlington, in the chair.

May we thank our many friends for their patronage during the past season. We have in prospect one of the finest crops of

"California Grown" Rosebushes

for 1940-41.

HOWARD ROSE COMPANY

Hemet, California

SHERWOOD NURSERY CO.

EVERGREENS :-: *Propagators & Growers*
141 S. E. 65th Avenue PORTLAND, ORE.

LEADING EVERGREEN PROPAGATORS OF THE PACIFIC COAST

Write today for Wholesale Trade List of evergreens. Many varieties listed.

MILTON NURSERY CO.

A. Miller & Sons, Inc.

Milton - *Since 1878* - Oregon

Growers of one of the most complete lines in Pacific Northwest

GENERAL NURSERY STOCK

Specializing in

Fruit Tree Seedlings, Oregon and Washington Grown Flowering and Ornamental Trees and Shrubs

Birches, Chinese Elms, Flowering Crabs, Hawthorns, Lindens, Norway and Schwedler Maples, Mountain Ash.

Combination carlots to Eastern distributing points afford minimum car rates.

Catalogue on request or Send your Want List.

OREGON'S BEST SOURCE OF GOOD ROSES is PETERSON & DERING, INC.

Wholesale Rose Growers

Scappoose, Oregon

Write for List

ORENCO NURSERY CO.

Orenco, Oregon

WHOLESALE GROWERS

Fruit, Shade, Flowering Ornamental Trees, Fruit-tree Seedlings, Roses, Etc.

Very complete line of quality stock

Catalogue sent on request.

NEMATODE-RESISTANT PEACH PITS

(Shalil Variety)

Order your supply from

CHRIS D. BERGTHOLDT Live Oak, Calif.

ROSE STORAGE.

Defoliation of rose plants by means of ethylene gas has passed the experimental stage, reports the Oregon experiment station, and it is being installed as a regular commercial practice. Results last fall indicated that a fairly airtight room is necessary, in which a temperature of 65 degrees Fahrenheit is maintained during treatment. The ethylene gas is usually supplied by apples, about one bushel being necessary for each 500 or 600 cubic feet of room space. The plants themselves must be kept moist during the time of treatment. Most sorts shed their leaves after about four days of treatment, although a few require longer. Rose plants defoliated by this method have kept well in storage and have made excellent growth in the field.

Fairly low temperatures are necessary in storing rose plants to keep them in a dormant condition, according to tests carried out by the Oregon station. Plants held at 31 degrees Fahrenheit remained dormant, but plants held at 33 degrees showed breaking of buds after several months. Dormancy of the plants when placed in storage is an important factor. Plants dug early and placed immediately in storage showed injury to the plants, but late-dug plants came out of storage in good condition and made good growth in the field.

To prevent shriveling in cold storage, it is necessary that packing materials contain forty to fifty per cent moisture. Fall planting of rose plants in western Oregon has proved to be far superior to spring planting.

GARDENS ON THE RADIO.

The first page of the WOR program listing for the week beginning June 2 carried an editorial tribute to the service rendered by the Radio Garden Club in its 15-minute broadcasts every Monday and Friday originating at that station. The importance of the programs, to gardeners and others as well, apparently has impressed even the commercial broadcasters.

THE new proprietor of the Spadra Nursery, 904 North Spadra road, Fullerton, Cal., is J. C. Reynolds, who formerly operated a lawn renovating service in that city. The nursery was previously managed by Charles Hezmalhalch.

PORTLAND WHOLESALE NURSERY CO.

306 S. E. 12th Ave., Portland, Oregon

To the Trade Only

A General Line of NURSERY STOCK

We also handle NURSERY SUPPLIES including

TWIST-EMS (The New Handy Plant Tie)

RUBBER BUDDING STRIPS (Goodrich)

WOODEN TREE and POT LABELS

Oregon-Grown Quality Guaranteed

A. McGILL & SON

FAIRVIEW, OREGON

Wholesale Only

GOOD WESTERN-GROWN NURSERY STOCK

Fruit Tree Seedlings
Flowering Ornamental Trees
Shade Trees
Roses

Grown right and packed right.

Combination carloads to Eastern distributing points will save you on freight.

Oregon-Grown SELECT NURSERY STOCK

Catalogue on request

DOTY & DOERNER, INC.

6691 S. W. Capitol Highway
Portland, Oregon

Perfection Currants
Fruit Tree Seedlings

Let us quote on your needs

DENISON & BLAIR

Troutdale **Oregon**

Fruits and Berries

NEW PEAR RESISTS BLIGHT.

Hot, humid summers throughout most fruit-producing areas make fire blight a serious problem in growing pears. That is the reason most of the high-quality dessert pears are grown in the western states where the weather is drier and blight is not so serious.

Fruit tree breeders of the federal bureau of plant industry have introduced a new pear variety which stands up well under blight. The new pear, known as the Waite, has excellent cooking and canning qualities, and in dessert quality is far ahead of such varieties as Kieffer and Pineapple.

In describing the new pear, the bureau scientists say that it is nearly as large as the Bartlett and is nearly free of the grit cells which characterize the Kieffer. It is a little more acid than the Bartlett and ripens about the same time as the Kieffer, with yields consistently high.

The scientists believe that the new pear will be particularly adapted to areas south of New York and may prove of value as far west as Kansas. Its cold hardiness has not been determined. They do not know whether the Waite will grow well south of the apple belt, but experimental plantings have been made in Georgia and central Mississippi.

The bureau does not distribute the new pear. Some commercial nurseries are advertising the Waite pear for the first time this year. These nurseries are the only source of planting stock.

GRAPE-BERRY MOTH.

Fighting the grape-berry moth is a case of taking the proverbial "stitch in time," warns Prof. F. Z. Hartzell, entomologist at the New York state experiment station, at Geneva. Grape growers should be on the lookout for the webbing of the blossom clusters which is the first indication that the pest is at work. This is not an infallible sign, however, and if the pest was serious last season preparations should be made to combat the insect at once.

There are two periods when efforts should be made to control this insect. The first is shortly after the blossoms appear, when the caterpillars of the berry moth are feeding on the stems and young fruit, followed by a second treatment within ten days or two weeks. The second period is during July and August, the exact time varying in different sections. A thorough application of a calcium arsenate-Bordeaux spray should be made immediately after the grapes have set and again by the time they have attained the size of buckshot. In areas where the pest was serious last season, two fixed nicotine sprays during July and early August are advised.

BLUEBERRY CULTURE.

Commercial production of blueberries began in New Jersey in 1916, and there are now over 1,000 acres planted to blueberries in that state, with smaller areas in production in Michigan and New England. In New York state a supposed lack of suitable soils and of information concerning the cultural requirements of the crop have retarded any extensive planting of blueberries. So a circular has been prepared as a guide for prospective planters by the New York experiment station, at Geneva. Prof. G. L. Slate, small fruit specialist, and Prof. R. C. Collison, soils specialist, are the authors.

The selection of the site with reference to soil type, the water table and especially the soil reaction is regarded as of primary consideration and is dealt with at some length in the circular. The authors point out that New York has nearly 50,000 acres of Saugatuck soils, the soil type upon which all commercial blueberry plantings in Michigan are growing and which is quite similar in many of its characteristics to the blueberry soils of New Jersey.

Considerable progress has been made in recent years on the improvement of blueberries, with the result that cultivated varieties are now available that are far superior to the general run of wild blueberries. Fourteen of the most promising of the newer varieties are briefly described. Information is also included on setting out the plants and on their subsequent care, as well as on pruning, fertilizing, propagating, harvesting, marketing and other details of blueberry growing.

PLUM-PRODUCING AREAS.

Approximately eighty per cent of the plum trees in the United States are in California, Oregon, Washington and southwestern Idaho, according to figures from the bureau of census of the United States Depart-

JUST PUBLISHED!

Second Edition — Revised and Enlarged

Manual of Cultivated Trees and Shrubs

By Alfred Rehder

Systematic descriptions of the cultivated woody plants—trees, shrubs and vines—grown in the temperate region of North America.

More than 2,500 species are enumerated in systematic order, with many varieties and garden forms, distributed among 486 genera in 113 families. Besides the descriptions of the plants, there are frequent cultural hints and indications of their hardiness according to zones.

996 pages, cloth bound, completely indexed.

Price, $10.50

American Nurseryman, 508 S. Dearborn St., Chicago

THANK YOU

We appreciate the business our customers sent us this past season.

You have displayed confidence in us, and you may rest assured that in the future you will receive the same good stock and service. Also, our assortment will be more complete next year.

Sherman Nursery Co.
Charles City, Iowa

The Best in Native Nursery-Grown
Rhododendrons
Kalmia Hemlocks
Azaleas and Pieris
LaBars' Rhododendron Nursery
STROUDSBURG, PA.

QUALITY PERENNIAL PLANTS
Specialties
Gypsophila Bristol Fairy and Dicentra Spectabilis.
Let us quote on your perennial needs.
PERENNIAL NURSERIES Painesville, O.
Alva H. Smith R.F.D. 2

AZALEAMUMS AMELIA CUSHIONS
All Colors.
Rooted cuttings and transplants.
Send for Big New Catalogue.
Hundreds of Fine Varieties.
WONDERLAND NURSERIES
ELLERSON, VA.

GERMAN IRIS

Special Offers	1 each	5 each	10 each
50 Varieties	$ 4.00	$ 7.50	$10.00
100 Varieties	8.00	15.00	20.00
150 Varieties	15.00	22.50	30.00
200 Varieties	20.00	30.00	40.00

Labeled. Express Collect. Cash.
SMITH GARDENS, Clarkston, Wash.

PEONIES
AT THEIR BEST.
Ask for List.
The Cottage Gardens
N. I. W. Krick Lansing, Mich.

Wholesale Growers of
Grapevines, Currants, Gooseberries, Blackberries and Raspberries
Let us quote on your requirements
FOSTER NURSERY COMPANY, INC.
60 Orchard St. Fredonia, N. Y.

SMALL FRUIT PLANTS
Evergreens—Shrubs
Lining-out Stock
Send for Complete Trade List
W. N. SCARFF'S SONS
New Carlisle, O.

ment of Commerce. Sixty-four of the 100 leading counties are in this region, and they produced over ninety per cent of the nation's crop in 1934.

Santa Clara county, Cal., was the outstanding county in the United States in number of trees of all ages, having over seventeen per cent of the total number. Sonoma county, also in California, ranked second. Thirty-four other California counties were in the first 100 counties, while Oregon had thirteen, Washington nine and Idaho six.

Other important commercial producing areas of plums included counties along the eastern shore of Lake Michigan, southern shores of Lake Erie and Lake Ontario, southwestern Pennsylvania and Niagara county, N. Y.

BORER REPELLENT.

"An ounce of prevention is worth a pound of cure" may well be applied by growers who are concerned with damage by certain species of borers.

After the adult moth or beetle deposits its eggs, the next stage in the life cycle of the borer is the actual borer in the form of larva. It is the larva that eats and bores and causes most of the worry and damage. So why not prevent the adult moth or beetle from depositing the egg?

Crystal borer repellent has been sold since 1931. As this material is a repellent only, application is made just before the egg-laying period commences. All adult moths and beetles do not lay their eggs at the same time. For instance, the eggs of the carpenter worm, which infests ash and oak, are laid during June and July. The adult beetle of the locust borer does not deposit its eggs until September. The Crystal Soap & Chemical Co. offers readers a free booklet which lists twenty species of trees infested by borers and suggestions as to the proper time of applying Crystal borer repellent.

NEW PLANT PATENT.

The following plant patent was issued June 4, according to an announcement by Rummler, Rummler & Davis, Chicago patent lawyers:

No. 401. Chrysanthemum. Itaro Nakata and Daniel Nakata, Tracy, Cal. A chrysanthemum characterized by a flower having a large, upright, polypetalous corolla, the petals thereof being a rich, pure yellow color, long, sturdy, longitudinally cupped and curved upward slightly at the tips.

HARDY FRUITS
Haralson Apple
Manchurian Apricots
Red Lake Currant
Fredonia Grape
Taylor Red Raspberry
Mary Washington Asparagus
Americana Plum Seedlings
Caragana Pygmæa, L.O.S.
ANDREWS NURSERY
Faribault, Minn.

Apple and Peach Trees
In Carload Lots
A long variety list to select from. We also can offer other Fruit Trees in carload lots, as well as **Tennessee Natural Peach Seeds.**
If you are interested in either **Fruit Trees** or **Peach Seeds,** send us your want lists and we will quote attractive prices.
SOUTHERN NURSERY CO.
Winchester, Tenn.

★ CALIFORNIA-GROWN ROSES
★ FRUIT TREE SEEDLINGS
★ ORNAMENTAL SHRUBS and TREES
Large list of Varieties and Grades
All Kinds of FRUIT TREES
★ *Write for Price List*
MOUNT ARBOR NURSERIES
E. S. Welch, Pres. — Est. 1875 — Shenandoah, Iowa
"One of America's Foremost Nurseries"

PEACH PITS

THE
Howard-Hickory Company
Hickory, N. C.

PEACH PITS
Our Pits Compare Favorably With the Best
HOGANSVILLE NURSERIES
HOGANSVILLE, GEORGIA

APPLE SEEDS
We accumulate several thousand pounds of apple seeds each fall season. Interested in contracts for all or part of our production.
Valley Evaporating Co.
Yakima, Washington

Old English
BOXWOOD
Wholesale
10 ins. and up — Any quantity
BOXWOOD GARDENS
Mrs. R. P. Royer, High Point, N. C.

New Books and Bulletins

REHDER'S NEW MANUAL.

Those botanically interested in the trees and shrubs which they grow, sell or plant will welcome the news that the second edition of Dr. Alfred Rehder's "Manual of Cultivated Trees and Shrubs," revised and enlarged, has just been published by the Macmillan Co., at $10.50. The first edition of this manual, published in 1927, has been established as the authoritative work of botanical reference on trees and shrubs hardy in North America above the subtropical and warmer temperate regions. This takes in approximately that area of the United States and Canada except the Atlantic coast from North Carolina southward, the Gulf coast states, California and the coastal area of Oregon and Washington.

Dr. Rehder, associate professor of dendrology and curator of the herbarium at the Arnold Arboretum, has had exceptional opportunity for his close study of hardy trees and shrubs, which has extended through a long lifetime; he is 77 years of age now.

During the period since the publication of the first edition, says the author, a large number of new species and varieties have been introduced and many new hybrids have appeared in cultivation. Changes in names have become necessary owing to more intensive study of certain groups by various authors and by the writer himself, and also owing to amendments and changes in the international rules of botanical nomenclature adopted by the botanical congresses in 1930 and 1935. Consequently, numerous additions have been necessary to the plants described; in some instances, as in rosa and rhododendron, the whole genus had to be rewritten.

The trees, shrubs and vines described in the book belong to 486 genera. The number of species, including a small number of horticulturally important hybrids, fully described and represented in the keys, is about 2,535, with about 2,685 varieties. Besides these, there are about twenty-five genera, 1,400 species and 540 hybrids briefly described or mentioned.

The present edition, besides thirty pages of introductory material, comprises 996 pages, including an index of seventy-six pages. This is an increase of about sixty pages over the earlier edition, and it is also to be noted that the pages are of slightly larger dimensions.

The thorough explanatory introduction and a glossary of botanical terms make the book useful to those without formal botanical training.

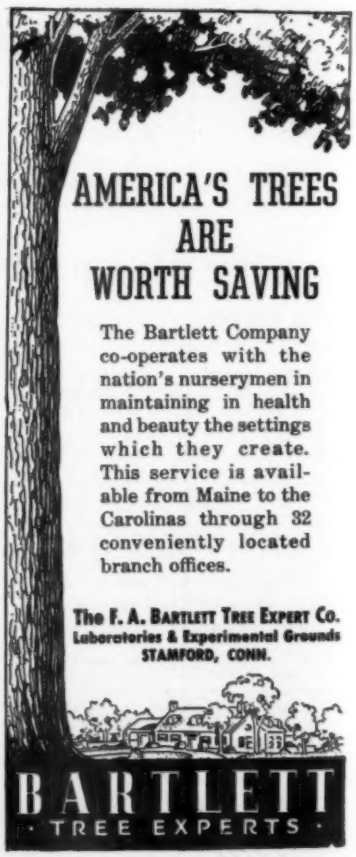
MODERN GARDEN DESIGN.

The designer who is seeking ideas for the treatment of plantings in conjunction with the modernistic, not to say futuristic, type of houses that are being built here and there, will find interest in the pictures as well as the text of an English book now being distributed on this side of the water. It is "Gardens in the Modern Landscape," by Christopher Tunnard, associate of the Institute of Landscape Architects, published in December, 1938, by the Architectural Press, London, and now distributed in the United States by the Chemical Publishing Co., at $6 per copy. The book is not primarily or exclusively devoted to garden designing for the modernistic type of house, but is rather the author's conception of the philosophy and artistic influences involved in the creation of a new landscape for the twentieth century.

In the early chapters of this 188-page book are traced the traditional influences of garden art in the preceding centuries. The great ages of this art, says the author, were in Italy the sixteenth, in France the seventeenth and in England the eighteenth century, respectively. He asserts that the nineteenth century debased all these traditions to a common level and created a medley of styles, some of which copied the fashions of the past, while others formed the roots of the modern movement now developing. In tracing the influences in those earlier centuries he refers to authors and artists of those eras as well as such famous landscape planters as Lancelot Brown, Humphry Repton and Gertrude Jekyll, each of whom comes in for a full share of pointed criticism.

Having set forth the errors of the past, the author then indicates the procedure toward a new technique, indicating three sources of inspiration for the modern designer—those of "functionalism," the Oriental influence and modern art. He terms the three methods functional, emphatic and artistic. He refers to the modern architecture of such men as Wright and le Corbusier. He discusses how gardens may be part of the modern planning of landscape and community, with profuse sketches and illustrations. Whether or not the reader receives any direct suggestions, he will find plenty of material to stimulate his thinking.

Because of the varied references to art, architecture, literature and history, the text of this book is not the simplest to read, even for the student versed in the history of landscape architecture, and he may or may not disagree with the decided points of view taken by the author. But the book is one which will stimulate thoughts and ideas in the mind of the professional designer who is trying to formulate his answer to the demands of present-day architecture. The numerous illustrations in the book are not just pictures, but presentations or illustrations of ideas, equally stimulating to this trend of thought. The book is handsomely printed on heavy enamel paper and bound in buff cloth stamped in blue.


AMERICA'S TREES
ARE
WORTH SAVING
The Bartlett Company co-operates with the nation's nurserymen in maintaining in health and beauty the settings which they create. This service is available from Maine to the Carolinas through 32 conveniently located branch offices.
The F. A. Bartlett Tree Expert Co.
Laboratories & Experimental Grounds
STAMFORD, CONN.
BARTLETT
TREE EXPERTS

BULLETINS RECEIVED.

"Common Insects of Lawns, Ornamental Shrubs and Shade Trees," by George S. Langford and Ernest N. Cory, bulletin 84 of the University of Maryland extension service, is especially useful because of the concise descriptions of the pests by classes, together with indications for their control and a list of them according to their hosts. It contains sixty pages and has numerous illustrations.

Iowa State College, at Ames, has issued several useful bulletins this spring, including P6, new series, on "Effect of Spacing and Length of Harvesting on Yields of Asparagus," by E. S. Haber, eight pages; P7, "Grape Training and Pruning in Iowa," by S. W. Edgecombe and T. J. Maney, sixteen pages, and P10, "Pruning Fruit Trees," by S. W. Edgecombe, thirty-two pages.

"How to Stop Chinch Bug Losses," by W. P. Flint, G. H. Duncan and J. H. Bigger, circular 505 of the University of Illinois college of agriculture, is primarily for the farmer who has suffered corn crop losses due to this pest.

"Grape Growing in California," by H. E. Jacob, circular 116 of the California agricultural extension service, covers fully in eighty pages, with a few illustrations, just about all of the procedure and problems met in vineyards of the Golden state.

LILY YEARBOOK.

Under the chairmanship of Prof. L. H. MacDaniels, Ithaca, N. Y., the lily committee of the American Horticultural Society annually presents the latest information on propagating, hybridization and other aspects of lily growing. The 1940 American Lily Yearbook, of which George L. Slate is editor, is handsomely printed and illustrated, a book of eighty pages between stiff board covers. Copies, at $1 each, are obtainable from the secretary of the American Horticultural Society, 821 Washington Loan & Trust building, Washington, D. C.

NUT GROWERS' REPORT.

Those interested in nut trees of various kinds will probably find the most current information about them in the annual volume of over 100 pages which carries the report of the proceedings of the annual meeting of the

Announcing—

PRE-CONVENTION NUMBER

of the

AMERICAN NURSERYMAN

JULY 15—forms close July 9

COVERS IN FULL COLOR

Reservations of advertising space already indicate a record-breaking issue. Its covers in full colors and special editorial features will command extra attention. You can reach everybody at the New York convention and several thousand other nurserymen with space in this issue. Prepare copy early and insure a good showing for your advertisement.

EARLY-BIRD NUMBER

JULY 1—forms close June 25

To reach the trade well in advance of the convention, use the early issue. Announcement of trade exhibitors, program features and entertainment.

Sixty-fifth Annual Convention
AMERICAN ASSOCIATION OF NURSERYMEN
Hotel Pennsylvania, New York City
July 22 to 26

This spring has been the best selling season nurserymen have had in ten years. Heavy demand resulted in shortages of stock. They will be buying heavily of stock, supplies and equipment for current needs and for next season. You can make sales now!

Advertise what you have to offer in
THE Magazine Nurserymen Everywhere READ!

Northern Nut Growers' Association. Just issued is that of the thirtieth annual meeting held at Rockport, Ind., September 7 to 9, 1939. A wide variety of experiences are contributed by a number of growers and experimenters, well compiled by the editor, Dr. W. C. Deming, Litchfield, Conn. Dr. A. S. Colby, of the University of Illinois, is president of the association, and the secretary is George L. Slate, of the New York agricultural experiment station, Geneva.

NEW YORK GARDEN.

"Hardy Ferns and Their Culture" is the title of a pamphlet of forty pages and cover comprising a group of articles and illustrations on ferns which appeared in the past three months in the journal of the New York Botanical Garden, Bronx Park, N. Y. Copies may be had from the garden at 25 cents each.

Estimate of the work done by the New York Botanical Garden directly for the public, and indirectly to the advantage of the trade, may be gained from the May issue of the journal published by the garden, the second section of which contains the annual report of the director.

ANDORRA HANDBOOK.

One of the handsomest pieces of printed matter put out by any nursery in this country is the Andorra Handbook of Trees and Shurbs, issued by the Andorra Nurseries, Inc., Chestnut Hill, Philadelphia, Pa., and so good reason appears for the notice at the bottom of the copyright page that additional copies are available at $1. The book consists of 120 pages, with heavy paper cover, in spiral binding. Handsomely printed on nearly every left-hand page is an illustration of a useful species of plant, each plate about 6x8 inches, the cream paper setting off the black ink. Each genus is briefly described in a paragraph in large type, while indicated for each species are the approximate height at maturity, color and time of bloom, conditions for growth and special remarks.

BOTANY BOOK FOR BLIND.

"Botany for the Amateur," the first book on plants for the blind, was placed on exhibition in Gardens on Parade, at the New York world's fair, May 27, in a presentation ceremony. Miss Jessie Fiske, state seed analyst, of the New Jersey agricultural experiment station, New Brunswick, wrote a series of botanical broadcasts which were heard over WOR in the programs of the Radio Garden Club. These have been compiled and transcribed into Braille.

Miss Fiske presented the book to Mrs. F. A. H. Anger, chairman of the Radio Garden Club of the Federated Garden Clubs of New York State, which were the sponsors. The first copy will be on view throughout the world's fair season, and additional copies will be made for distribution to garden club libraries and libraries for the blind.

Some months ago, one of the blind listeners to the radio broadcasts asked whether digests of Miss Fiske's talks on botany were available in Braille. On hearing of his request the Federated Garden Clubs of New York State started a fund to defray the expenses of having some of the Radio Garden Club broadcasts transcribed into Braille. The New York chapter of the American Red Cross coöperated in furthering the project.

VITAPANE PRICE RISE.

R-V Lite Vitapane, the transparent glass substitute which has established itself so quickly in the one year it has been on the market, announces a slight increase in prices.

Since the introduction of this product last year, the Arvey Corporation has held the price steady in spite of increasing raw material costs influenced by conditions at home and abroad. It announces, however, that the new prices, which will be effective July 15, will allow dealers a longer profit than before.

Promotion is now being planned for the 1940 fall campaign, including new illustrated folders, counter stands and window posters.

CATALOGUES RECEIVED.

Hauck Manufacturing Co., Brooklyn, N. Y.—Catalogue for 1940, of 24 pages, describes the various ways in which flame guns save labor in nurseries and elsewhere, and describes the Hauck equipment, including the new Vulcan Junior made for users of limited weed burning requirements.

Fairmount Gardens, Lowell, Mass.—Retail catalogue of irises and hemerocallis introduced by Fairmount Gardens and a lengthy descriptive list of new and standard irises of various types, oriental poppies, hemerocallis and peonies; 28 pages and cover, 8½x11 inches.

ESTIMATING CHARTS

By JOHN SURTEES

The new Ready Reckoner for Tree Balls, Tree Pits, Lawns, Hedges, Excavation, Topsoil, Humus, Manure, Areas, Weights, Carloads, Truckloads and much other information.

They Save Time. They Save Errors.

Over 200 sizes Tree Balls, 800 sizes Tree Pits, Truckloads, Carloads, Quantities, Weights, Areas. All figured out for immediate reference.

The Useful Ready Reckoner and Guide for Estimating

For Nurserymen, Landscape Architects and Contractors, Colleges, Highway and Park Departments.

Second edition now in print.

Price $2.00

For sale by

AMERICAN NURSERYMAN

508 S. Dearborn St. Chicago, Ill.

CLASSIFIED ADVERTISING

Peonies: Tree and Herbaceous, best varieties. Oberlin Peony Gardens, Sinking Spring, Pa.

MAZZARD CHERRY AND PEACH PITS. Will be offered as usual again this season. Write for prices.
WAYNESBORO NURS., WAYNESBORO, VA.

GYPSOPHILA BRISTOL FAIRY.

Well established, grafted plants.	Doz.	100
2½-in. rose pots	$1.30	$8.00
2¼-in. pots	1.10	7.00
2½-in. Bodgeri	1.30	8.00
2½-in. Rosy Veil	1.30	8.00

CHAS. L. GUENTHNER,
R. 2, Piqua, O.

Still Shipping

GLADIOLUS BULBS and HEMEROCALLIS

For prices, write

GEO. W. HUNTER, Grower
R. F. D. 4, DOWAGIAC, MICH.

HELP WANTED

Experienced salesman to sell complete nursery line to florists, nurserymen, seed, department and hardware stores. Old established firm. Full-time proposition. Commission. Drawing account to right man. Give full details and experience. Address No. 164, c/o American Nurseryman, 508 S. Dearborn St., Chicago, Ill.

HELP WANTED

Nursery superintendent desired by retail nursery of 100 acres. Prior experience as superintendent not essential but must have good nursery experience and references. Salary limited only by results.

Address No. 160, c/o American Nurseryman, 508 S. Dearborn St., Chicago, Ill.

ATTENTION NURSERYMEN!
Spray with, and recommend
IMP. SOAP SPRAY
Use 1 part with 25 to 40 parts of water
Ask your nearest seedsman, or write for literature.
THE AMERICAN COLOR AND CHEMICAL CO.
176 Purchase St. Boston, Mass.

RAFFIA
A small supply of all three standard brands on hand.
GOODRICH
Rubber Budding Strips, all sizes.
NURSERY SUPPLIES
Write for prices
THOMAS B. MEEHAN CO.
DRESHER, PA.

ARIENS-Tiller

The American TILLAGE COMBINE
3 MODELS TO FIT EVERY NEED
ARIENS CO.
Box 710 Brillion, Wis.

MICHIGAN PEAT
Exclusively used by International Friendship Gardens. Kemp shredded; screened, 2-bu. bag Michigan Peat, by freight, $1.00. 5 or more bags, 33⅓ off.
MICHIGAN PEAT CO.
Buchanan, Mich.

Blades sharp on both edges—cuts forward and backward.
4" Open Hoe $1.00
6" Open Hoe 1.20
8" Open Hoe 1.35
10" Open Hoe 1.50
If not handled by your dealer, send Money Order to
ANDERSON OPEN HOE CO.
215 Orcas St., Seattle
We pay the postage in U.S.A.

HERBS
Pot-grown plants; over a hundred varieties. Dried Herbs for Flavoring and Fragrance. Other plants of unusual character and with the charm of old-time gardens.
New Catalogue sent on receipt of 10 cents.
WEATHERED OAK HERB FARM, INC.
Bradley Hills, Bethesda, Maryland

NEW PRONOUNCING DICTIONARY
of Plant Names and Botanical Terms
64 pages, 3000 names, 25c per copy
AMERICAN NURSERYMAN
508 S. Dearborn St. Chicago, Ill.

OBITUARY.

Adolph Kruhm.

Adolph Kruhm, 56, garden editor of the New York World-Telegram since 1936, died June 5 of a heart ailment in a private hospital at Amityville, Long Island, N. Y.

Born in Erfurt, Germany, Mr. Kruhm in his youth was an apprentice in the horticultural establishment of Christian Lorenz. He came to the United States at the age of 18 and entered the employ of W. Atlee Burpee, later taking charge of the Fordhook trial grounds. For the past quarter century he wrote extensively on horticultural subjects in amateur garden magazines.

Mr. Kruhm also was consultant and writer for advertising and promotion publications of several seed houses. He wrote two books, "Home Vegetable Gardening" and "Vegetable Gardening from A to Z," while in the advertising department of the Doubleday publishing firm. He illustrated his articles with photographs he took himself.

His home was at 69 Elizabeth street, Hempstead, Long Island, where he had one of the finest gardens in the area.

Surviving are his widow, Mrs. Caroline Kruhm; two sons, Kenneth and Alfred Kruhm, and three daughters, Mrs. Rose Swanson, Mrs. Dorothy Graham and Mrs. Elsie Wren.

B. J.

Mrs. A. A. Kelly.

A stroke resulted fatally May 26 for Mrs. A. A. Kelly, of the Kelly Plant Gardens, Spokane, Wash. With her husband, Mrs. Kelly developed the Kelly gardens, which two years ago celebrated their fiftieth anniversary. The business is now conducted by a son, Harry.

Mr. and Mrs. Kelly would have celebrated their fiftieth wedding anniversary next Christmas. Survivors include her husband; two sons, Joseph and Harry; two sisters, and a brother.

Le Roy Pottenger.

Le Roy Pottenger, 5-year-old son of Marshall Pottenger, of Franken Bros., Deerfield, Ill., was found drowned in an abandoned well on the nursery after policemen and a posse of over 100 citizens had searched for him by flashlight the night of June 3. The boy disappeared while Mr. Pot-

A NEW WEATHERPROOF
PLANT MARKER
"IT WEARS A CAP"
No fade-out of your markings

It's the finest marker you have ever seen.
Made of metal it stays put.
Baked enamel green finish—Rains wash it like a dish.
Slip-over fool-proof metal cap with airplane transparent window material.
Stake 7" long, ample white marking space, 1⅛" x 2½".
Beauty, Strength, Permanence.
Sample mailed on request. For resale it will show you a big profit. It is the marker you have long wanted for your nursery.
Address Dept. A
SMITH INDUSTRIES
XENIA, OHIO

BOOKS
reviewed in this issue and any others on horticultural subjects are obtainable through
THE AMERICAN NURSERYMAN
508 S. Dearborn St., Chicago, Ill.
Ask for circular of horticultural books.

for Successful Lawns
Make sure of seed that brings you results — by taking advantage of Woodruff service. Write for details.
F. H. Woodruff & Sons, Inc., Milford, Conn.
WOODRUFF *Lawn Seed*

North Dakota and Montana Seeds
PRUNUS AMERICANA (Native Wild Plum)
Write for special prices on quantity lots. Also other forestry seeds, native plants and wild flower seeds.
E. C. MORAN
Medora, N. D.

KILL WEEDS QUICKLY, EASILY!

Hauck Flame Gun—2000°F controlled heat—economically destroys weeds (seeds and all), brush, Canada thistle, wild morning glory, poison ivy, other objectionable growths. Keeps electric fences, irrigation ditches, orchards, etc. free from weeds. Hundreds of uses—breaking rocks, burning stumps, etc. Safe—Easy to use. Saves time and money. 10 Day Trial. Satisfaction guaranteed. Write for Free folder and prices.
5 POPULAR PRICED MODELS
HAUCK MFG. CO.
143 Tenth Street, Brooklyn, N.Y.

SUPPLIES — TOOLS

FOR
Tree Surgeons
Landscape Men
Nurserymen - Growers

Send today for a free copy of the
— BLUE BOOK —

The most descriptive and complete catalogue listing the largest and most select stock available.

AMERICAN FLORIST SUPPLY
... 1335 W. Randolph St. CHICAGO

The GRAVELY GARDEN TRACTOR & POWER MOWER

Write for facts.
GRAVELY MFG. CO.
Box 517
Dunbar, W. Va.

The ideal machine for the Commercial Grower... Goes in narrow rows... Has ample Power.

GOODRICH RUBBER
Budding Strips
Write for samples and prices.
The Willis Nursery Co.
Ottawa, Kans.

New Spray for **MILDEWS**
A new liquid Copper Fungicide to use against Mildews, Black Spot & other plant diseases. Combines with "EXTRAX" Garden Spray for combination control of many insects and diseases. Past Control Guide FREE. California Spray-Chemical Corp., "The ORTHO Co." Elizabeth, New Jersey - Richmond, California

GREENLEAF
COPPER FUNGICIDE

CLARK GARDNER NURSERIES
Osage, Iowa
Originators of patented **SEMI-POTTED PLANT AND BULB PACKAGE** for over-counter trade. Has **WATERING TUBE** and other unique features.

USE *Duratex* TREE WRAP
For PROTECTION AGAINST BORERS, BEETLES, RODENTS, FROST & SUNSCALD

CHASE BAG CO.
CHAGRIN FALLS, OHIO

tenger was attending a meeting of village trustees, and the posse was organized when Mrs. Pottenger telephoned her husband that the boy was missing.

PREVIEW ROSES AT FAIR.

Garden editors and members of the general press were invited to a preview June 11 of "Roses on Parade," the exhibit of Jackson & Perkins Co., Newark, N. Y., at the New York fair. The rose garden, which is the largest exhibit in "Gardens on Parade," contains thirty new varieties of roses never shown before this year and not available to the public until 1941.

This year "Roses on Parade" comprises 10,000 square feet of garden planted with 8,000 rosebushes from eighteen foreign countries. Most spectacular of these plantings is the floribunda class in the center, which alone is expected to produce 1,000,000 blooms during rose week at the fair, which has been designated as June 16 to 22.

"Roses on Parade" was laid out by Professor Hugh Findlay, of Columbia University, who has created a modern arrangement of slender and narrow, rather than tall and heavy lines.

MOTOR TRUCK SCALE.

To determine the freight charges of trees and shrubs shipped by truck and to see that truckloads do not violate the weight limitations prescribed in highway regulations, a new Toledo motor truck scale has been installed at the Monroe Nurseries, of the I. E. Ilgenfritz' Sons Co., Monroe, Mich.

The scale has a dial capacity indication of 10,000 pounds and a platform measuring 10x28 feet. In addition, it is equipped with a printweigh attachment, which mechanically prints a record of every load passing over the platform. This device is especially useful in making up itemized weight reports when shipments are composed of a variety of items.

THE $17,139 planting job at Hanover Acres, Allentown, Pa., including 155 trees, 1,098 shrubs, 3,540 hedge plants and seeding ten acres, was done by the Grand View Nurseries, Mount Vernon, N. Y. The trees came from the William H. Doyle Nursery, Berwyn, Pa., and the other plants from various sources.

SAVE WITH C. P. O.

Use this *Safe, Odorless, Non-Poisonous Spreader* in place of fish oil soaps and summer oils.

FOR BETTER CONTROL OF

Lace Bug	Pine Leaf Scale
Red Spider	Spruce Gall Aphis
Juniper Scale	Euonymus Scale
Lilac Scale	Aphids

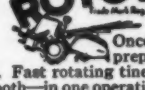
And Most Sucking Insects on Evergreens and Ornamentals

Write for information and booklets. Learn how to reduce nicotine spray costs as much as two-thirds.

Crystal Soap & Chemical Co., Inc.
Department A N
6300 State Road, PHILADELPHIA, PA.

LABELS FOR NURSERYMEN
THE BENJAMIN CHASE COMPANY
DERRY, N. H.

GROW MORE, BETTER VEGETABLES, FLOWERS WITH ROTOTILLER



Once over with ROTOTILLER prepares ground for planting. Fast rotating tines plow, disc, harrow, smooth—in one operation. Makes unexcelled deep seed bed. Breaks hard sod. Most efficient for cultivating; used by leading growers. Easy to handle; fully guaranteed. 1 to 10 h. p.
Write for FREE 44-page catalog.
ROTOTILLER, INC., TROY, N. Y., DEPT. N

DESCRIPTIVE PLATE BOOKS
Book No. 1. 80 Colored Illustrations. 50c
Book No. 2. 160 Colored Illustrations. 75c
PROCESS COLOR PRINTING CO.
701 Searle Bldg. Rochester, N. Y.

2000° F. FLAME GETS STALKS, SEEDS, ROOTS.

KILL WEEDS WITH FIRE
10 DAY TRIAL
FREE 48 PAGE Book. Solves 99 Farm Problems
AEROIL BURNER CO
2017 S. Michigan Ave. Chicago, Ill.

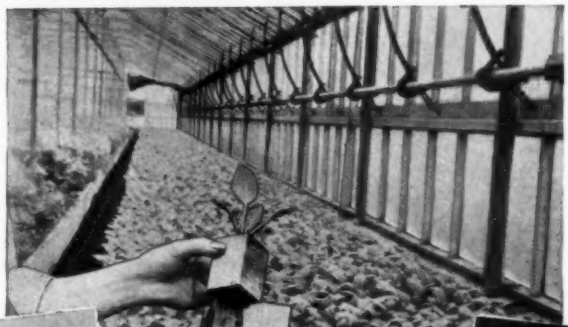
NURSERY TOOLS
Nursery Spades, Kunde Knives and Pruning Shears, Budding and Grafting Supplies, Tree Surgery Equipment.
Write for Free 96-page Catalogue.
A. M. LEONARD & SON
PIQUA, OHIO

Those Wooden Plant Bands

Try them this summer for your hardy perennial plants for resale or to carry over in the fall. You'll be amazed at how easily they are moved in the spring!

Write for samples and prices.

Send for circular describing full line



Will Be Found
Of Particular Interest
to the
Progressive Nurseryman

Geo. J. Ball INC.
WEST CHICAGO ILLINOIS

"Flower Seeds for Nurserymen"

Patent No. 2073695

MAKE MORE PROFIT—Sell Your Roses, Perennials, Shrubs, Vines and Fruit Trees Started and Growing in

Cloverset Plant Pots

Nursery Stock grown in **Cloverset Patented Pots** can be sold and planted without wilt to bud or bloom any time during the hot Summer months. Hardy Chrysanthemums grown in **Cloverset Pots** will make money for you next Fall.

Write today for **free** illustrated circulars and testimonials from users of these pots. Carton of samples by mail, **25c.**

CLOVERSET FLOWER FARM
ERNEST HAYSLER and SON
10520 Broadway KANSAS CITY, MO.

HILL'S BOOK OF EVERGREENS

This beautifully illustrated book answers every question about evergreens. Produced by America's leading evergreen nursery with a background of 80 years' experience.

Fifty chapters, including complete information on uses, descriptions, propagation, historical and cultural information pertaining to evergreens.

Cloth bound, 7x9½ inches, containing 320 pages and 360 illustrations, 45 in full color. **$3.50** postpaid.

Order from

AMERICAN NURSERYMAN
508 S. Dearborn St. **Chicago**

Write for information on

AUTOMOTIVE TREE MOVERS
TREE MOVING CART
WHEELED EVERGREEN CARRIER
NURSERY HAND TRUCK

Nurseries in all sections of the United States are using our equipment.

THE GARDEN SHOP, INC., 4819 Mission Road, Kansas City, Kan.

Vita-Flor

VITAMIN B_1 PLUS OTHER KNOWN VITAL PLANT GROWTH FACTORS

Easy to use
No Refrigeration

Easy to Use — In the Handy Eye-dropper Bottle

VITA-FLOR requires no tedious mixing, no refrigeration. Two drops vitamize one gallon of water. Available in ¼ ounce and 1 ounce bottles, packed in attractive cartons and larger sizes for commercial use.

VITA - FLOR Is Packed in an Attractive Display Carton

Many of your customers are already thinking and asking about Vitamin B_1. VITA - FLOR, displayed in this attractive carton, will act as its own salesman. Everyone interested in gardening is a potential customer for this new and superior product.

A New Product To Meet a New Demand

The biggest news in gardening circles this year is Vitamin B_1. Garden magazines and farm publications are filled with accounts of the remarkable results obtained by supplying Vitamin B_1 to growing plants. Everyone interested in gardening is talking about this new discovery — reading about it — asking for it. A wealth of evidence indicates its usefulness to flower growers, nurserymen, and home gardeners.

Vita-Flor

has been proven valuable in helping plants and shrubs to mature earlier and enabling the grower to reach a less competitive market — thus making more valuable space available to the grower — and by supplying customers with a standardized Vitamin B_1 source. VITA-FLOR is backed by the reputation and prestige of National Oil Products Company, leaders in the field of vitamin supplements for fifteen years. Nopco controls the manufacture of VITA-FLOR, thus assuring you of an accurate, standardized product.

VITA-FLOR is MORE Than Vitamin B_1.

Experimental evidence indicates that VITA-FLOR with its Vitamin B_1 plus other known vital plant growth factors has frequently produced better results than Vitamin B_1 alone.

Attractive Folders, Display Cards and Ad Mats Furnished FREE!

In addition to a wealth of attractive advertising literature, VITA-FLOR offers you the advantage of a nation-wide advertising program in the important garden magazines. By keeping VITA-FLOR prominently displayed, you can capitalize on this valuable publicity — identifying your organization as headquarters for this outstanding product.

Fill Out This Coupon and Mail Today!

Gardening time is the time of heavy demand for VITA-FLOR. Clip this coupon and mail today for full information about the profit possibilities of VITA-FLOR.

NATIONAL OIL PRODUCTS COMPANY
DEPT. N HARRISON, NEW JERSEY

I want to know more about VITA-FLOR. Please send me full details, price lists and information about your liberal dealer discounts at once.

Name.....

Address.....

HOW TO USE VITA-FLOR

Vitamin B_1 is an essential growth factor. Normally, plants manufacture their own Vitamin B_1 in their leaves and transport it to their roots. But some plants are unable to produce sufficient for their own needs. VITA-FLOR supplies the necessary Vitamin B_1 plus other known vital plant growth factors—helps plants develop roots that are robust and sturdy——blossoms that are larger and more beautiful. VITA-FLOR is also an important aid in overcoming root shock when plants, trees, and shrubs are transplanted. Surface watering requires only two drops to each gallon of water applied weekly when plants are watered—for transplanting one drop of VITA-FLOR should be added to each pint of water.

NATIONAL OIL PRODUCTS COMPANY . . . HARRISON, NEW JERSEY